

# The Chemical Age

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## Contents

PAGE

EDITORIAL NOTES: Flourishing Chemical Trade; The London Fuel Conference; Low-Temperature Carbonization; Chemistry and Monopoly .....	135
British Party Leaves for America: Photographs.....	137
With the Chemical Engineers to Canada and the States, by our Special Correspondent .....	138
The London Fuel Conference .....	139
Chemical Trade Returns for July .....	140
"C.A." Queries .....	141
From Week to Week.....	142
References to Current Literature .....	143
Patent Literature .....	144
Weekly Chemical Prices and Market Reports .....	147
Company News; New Trade Marks; Chemical Trade Inquiries .....	152
Commercial Intelligence; New Companies Registered .....	154
THE CHINA CLAY TRADE REVIEW SECTION.....	5-10

**NOTICES:**—All communications relating to editorial matter should be addressed to the Editor, who will be pleased to consider articles or contributions dealing with modern chemical developments or suggestions bearing upon the advancement of the chemical industry in this country. Communications relating to advertisements or general matters should be addressed to the Manager.

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## Flourishing Chemical Trade

IT is pleasant to be able to repeat once more (now almost monotonously) that chemical trade still grows better. The monthly advent of the trade returns, the examination of which was once only a duty, is now an event to be anticipated with pleasure. For the month of July, imports have increased in value very slightly as compared with last year, exports have increased by over a quarter of a million pounds, and exports of imported merchandise also show an increase. It is, however, in the whole seven months ended July 31 that the real effect of a steady improvement is shown. In this period, imports have decreased in value by nearly two hundred thousand pounds as compared with last year; exports have increased by over a million and a half pounds; and exports of imported merchandise also show a slight increase. These figures are welcome for more than one reason. There are a number of industries which are not, unfortunately, so happy in their condition as the chemical industry. The figures for unemployment in the country as a whole, for all industries, are also disturbing. There is, however, a ray of hope in the flourishing condition of industrial

chemistry. More and more, the needs of the world are satisfied by goods which are elaborated by chemical operations; and when (let us hope in the near future) such things as the liquefaction of coal become industrial realities in this country, it is likely that the resulting industries which arise will be so large, and will grow so quickly, as more than to offset the decline of some of the older industries. Perhaps we are not too optimistic in regarding the present time as a transition period between the zenith of the older (and on the whole rather unscientific) industries and the real growth of the new scientific ones.

As regards imports, it is of interest that for the first seven months of 1928, sodium nitrate has come in slightly larger quantity (but smaller value) than in 1927, though for the month of July itself there is an actual decrease in the quantity imported. Imports of quinine increased considerably during the month, though on the whole seven months there is a slight decrease. Imports of dyestuffs are, of course, decreasing.

In the export section, ammonium sulphate forms a strong point. In July of this year 37,811 tons of ammonium sulphate were exported, as compared with 23,428 tons in 1927. A large part of the increase is due to Japan, which more than doubled its purchase of this substance. This is a highly interesting fact. There is no doubt that from the point of view of the synthetic fertiliser industry, the Far Eastern markets are of very great importance, and it is very satisfactory to see that in spite of the fierce competition which must be coming from Germany, British exports are doing so well. In order to indicate that the importance of this industry has not been exaggerated, it is merely necessary to quote the following figures: the total exports of ammonium sulphate for the seven months ended July 31 were 209,200 tons (as compared with 136,832 tons in 1927), valued at £2,101,976 (as compared with £1,470,511 in 1927). Recollecting that the total value of all British chemical exports for the first seven months of 1928 was £14,900,269, it is seen that ammonium sulphate exported forms in value one-seventh of the total. This startling fact deserves careful consideration. It also underlines the manner in which (as was suggested above) the new industries may help to redress the balance of the old.

Exports of coal tar products (anthracene, benzol, tar oil, etc.) also show a great increase, alike in quantity and value, both for the month of July and the first seven months. For the month of July, exports of sodium compounds show a slight decrease in value as compared with last year, but for the first seven months of the year there is still a slight increase. The exports of dyestuffs show a steady increase. Finally, paints and kindred materials show a slight increase in the value

of exports for the month of July, but a slight decrease when the total for the first seven months of the year is taken into account.

Elsewhere in this issue we publish figures indicating the state of the chemical industry of Germany. It will be seen from the figures there cited that the dividends paid have increased steadily in the last few years, as has also the proportion of the 115 German firms taken into account who paid dividends at all. The figures also show that the overwhelming importance of the I.G. Farbenindustrie A.-G. in German chemical industry as a whole has not been exaggerated. In view of the prosperous condition of German chemical industry it is a matter for congratulation that the British industry is also doing so well.

### The London Fuel Conference

IT is evident from the programme just issued that the Fuel Conference which will take place at the Imperial Institute in the period September 24–October 6 is being organised very efficiently. The meeting is a sectional meeting of the World Power Conference, arranged by the British National Committee of the latter with the approval of the International Executive Council. The Conference is divided into 22 sections, and, judging from the time table, every possible aspect of the fuel question will be dealt with.

The great difficulty at these conferences is that owing to the multiplicity of the papers presented, and the variety of subjects to be discussed, those who attend are often left in a state of acute mental indigestion. The organisers of the Conference, bearing this in mind, have dealt with the situation in a very sensible way. A general report is being prepared for each section of the Conference. These general reports will be the only papers read at each session, and will cover all the papers for presentation at each session. They will not exceed 3,000 words in length and will be divided into three parts, i.e., a summary of points of outstanding interest; an indication of trend of development; and agenda for discussion. The discussions will be limited to the questions enumerated in the general reports, and in this way the meetings will be made of real value, for the proceedings will be concentrated upon matters of primary importance.

Efforts are being made to remove every hindrance from the path of those who wish to attend the Conference. By arrangement with the railway companies of Great Britain, members may obtain return tickets to London at reduced fares. The secretaries, through the official travel agents, Thos. Cook and Son, Ltd., will assist members in obtaining hotel accommodation in London. Offices for the use of members will be arranged at the Imperial Institute, and inquiry, travel and general bureaux will be provided. An entertainment committee has been formed to deal with official receptions and entertainments, and arrangements are being made for visits to places of outstanding interest to the fuel industry during the period of the Conference. Should the circumstances warrant it a special tour may be arranged, to take place immediately after the Conference, to visit places at some distance from London. Organised excursions are also receiving consideration.

For the thirty shillings (or one pound in the case of members of participating bodies) which is charged for membership all this is very good value.

### Chemical Science and Monopoly

SIR James Irvine, Principal of the University of St. Andrews, in his lectures to the American Institute of Chemistry, has been describing chemistry as the nemesis of every monopoly based on raw materials. By reducing many forms of matter to simple elements or compounds, and then making up by synthesis a desired substance, chemistry, he claims, works for equal industrial and commercial opportunity. In his view, chemistry and the sister sciences are preparing great puzzles and tasks for the financier and statesman; most of the social and economic problems to-day are those of distribution and consumption of the immense quantity of commodities poured into the world by the efforts of the chemist and engineer. As an example of chemistry's power to create new and destroy old values, he cited the patents and processes for the manufacture of acetone, stimulated and made valuable by the war-time demand for cordite. All these are now superseded because acetone has become a by-product of butanol, the solvent that makes possible the lacquers which have contributed so much to the low price and fine appearance of the motor car.

### Low-Temperature Carbonisation

STATEMENTS regarding low-temperature carbonisation have lately been very numerous. The financial journals have begun to take a renewed interest in the subject. One of them puts the case as follows:—"None of the processes can honestly promise fabulous profits, but a sound return on one's money should certainly be obtainable with due caution. It would appear, indeed, as if we were on the threshold of a new, solidly founded industry, which may bring considerable prosperity to the coal and heavy industries, thereby benefiting us nationally."

The last report of the Fuel Research Board on the subject indicated that as far as that body was concerned, it was unable to express an opinion about low-temperature carbonisation until it had experience of tests on the manufacturing scale, together with an accurate examination of costs. The Gas Light and Coke Co., as is well known, is now erecting a plant for the purpose of carrying out such tests. It is to be assumed that this company and the Government would not engage in such an enterprise without some hope of success, and future reports regarding the matter will be awaited with interest.

### The Calendar

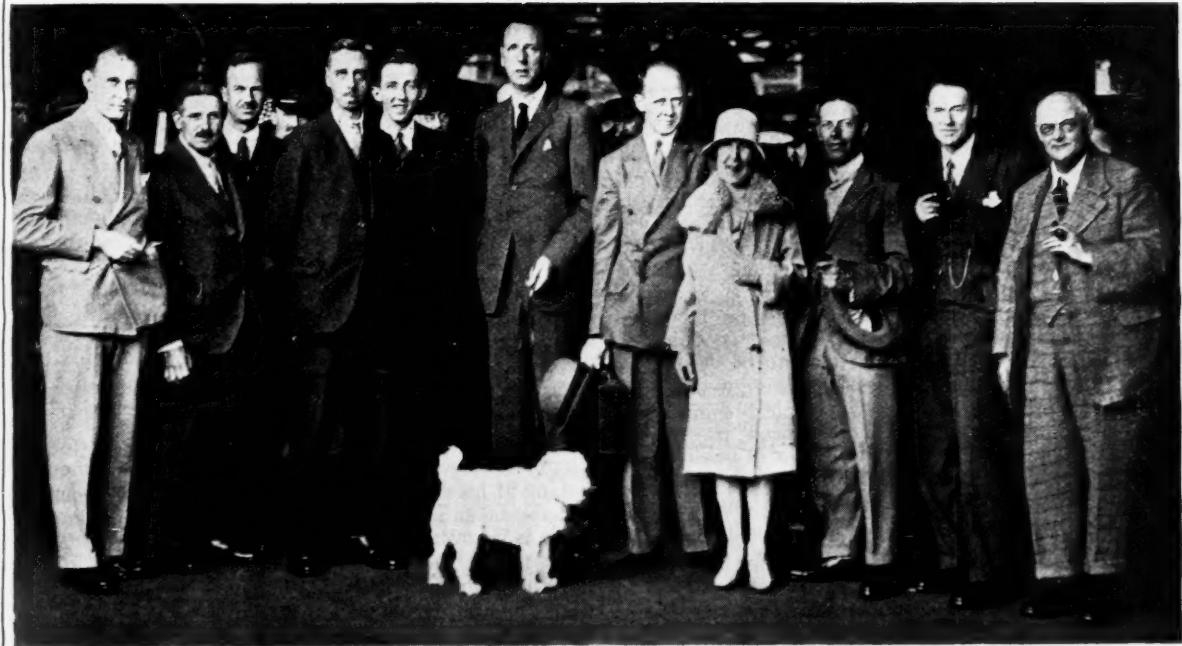
Aug. 18	North of England Institute of Mining and Mechanical Engineers. Annual General Meeting. 2.30 p.m.	Newcastle-on-Tyne
Sep. 3-7	Society of Chemical Industry: Annual General Meeting.	New York, U.S.A.
5-12	British Association Meeting.	Glasgow.
20-22	Mining Institute of Scotland: Excursion to Lochaber Hydro-Electric Works, Fort William.	

## British Party Leaves for Canada and the United States

THE PHOTOGRAPHS REPRODUCED WERE TAKEN AT WATERLOO STATION ON SATURDAY, AUGUST 11, WHEN THE PARTY REPRESENTING THE INSTITUTION OF CHEMICAL ENGINEERS AND THE SOCIETY OF CHEMICAL INDUSTRY LEFT



FOR AMERICA. (ABOVE), SIR ALEXANDER GIBB, PRESIDENT OF THE INSTITUTION OF CHEMICAL ENGINEERS (R.), AND MR. F. H. CARR, PRESIDENT OF THE SOCIETY OF CHEMICAL INDUSTRY (L.). (BELOW), SOME MEMBERS OF THE PARTY.



*Sport and General*

## With the Chemical Engineers to Canada and the U.S.A.

By Our Special Correspondent

*During the course of the tour of Canada and the United States by members of the Institution of Chemical Engineers and of the Society of Chemical Industry, THE CHEMICAL AGE will publish notes on the tour written by a special correspondent, who is a member of the party. The first series of notes appears below.*

White Star s.s. Megantic, Sunday.

WHEN the members of the Chemical Engineers' party made their reappearance this morning, after their first night on board, they all agreed that the great adventure had been well begun. The worst that has happened so far is that we are some hours behind scheduled time. This is the result, partly of a start from Southampton nearly three hours late, and of running into fog after rounding the Isle of Wight, which forced us to go dead slow until the early hours of this morning.

At the docks, after a pleasant railway journey from Waterloo, our hopes of a prompt departure were destroyed by the arrival of small batches of harvesters for Canada, who were apparently being rounded up, and as the *Megantic* was the last of the ocean liners to leave, we had to wait for these noble sons of the Empire for nearly three hours. If they had marched on board with their sickles on their shoulders, we might have been impressed. But, as I have said, they straggled in rather like the creatures into the ark, and the manner of their advent, as well as their effect on our departure, did not tend to popularise them. However, the delay had its compensations. For, instead of going straight out past the Needles, we went close in to Cowes and had a very good view of the King's yacht and other interesting craft on the closing day of the great regatta. Then, after rounding the eastern end of the island, we ran into fog which held us up for some hours and caused us to lose time.

The first day on board is always a rather unsettled time, and the members did not see a great deal of one another on Saturday. This morning, however, they were on deck early, enjoying a delightful breeze and tracing the ship's progress down the Channel along the last of the English coast before making for Queenstown.

My first visit after breakfast was to the quarters of the main body of the party, who, faithful to their vows, are travelling together third tourist. There was Professor Hinchley, comfortably tucked up in rugs on his deck chair, reporting that he had had quite a good night, though the ship's hooter left something to be desired as an obligato, and confessing that nothing more was needed for perfect happiness than a few chemical engineering hints for the instruction of inexperienced passengers. Mr. Ure, his devoted assistant and director of publicity to the engineers, was out early and reported all the members to be fit and hearty. All spoke well of their quarters and were in very good spirits.

Returning to the cabin section, I found Mr. P. Parrish strenuously engaged in a game of deck quoits. Mr. Parrish just managed to finish the last sentence of a paper

he is reading at the World Power Conference before jumping into the train at Waterloo, and he is already turning his attention to another paper he has been asked to give at the American Chemical Society's meeting at Swampscott. Still, one hopes in the coming week to tempt him away from these stern pursuits.

Mr. and Mrs. Carr were among the early ones taking their constitutional tramp round the promenade deck this morning, and both looked well enough to defy the roll for which the old *Megantic* has rather a name. Mr. Carr is delighted at the enthusiasm with which the idea of the party has been taken up, and is looking forward with great interest to the tour in Canada and America. Sir Alexander Gibb, a well-seasoned sailor, was busy looking up members of the party, and giving them his cheerful blessing. I was glad to see him also at the service this morning, with another devout Scottish Presbyterian, Dr. W. Cullen. Between us we made quite a good show with the hymns and responses. But the party generally did not make a good start with its devotions. Perhaps one or two extra rolls of the ship had decided them to keep within easy reach of port.

A short time before the service I came across Dr. Cullen addressing a select company in the lounge on the enterprise of THE CHEMICAL AGE, whose pages one found several members of the party reading. "The only chemical journal," he was saying, "that's represented in the party and the only chemical journal on board. It's satisfactory to find a little enterprise in one of our publications at least."

Hastily retreating in the face of these undisguised compliments, I ran into Professor Barton, one of the American delegates to the Hague chemical conference, from which he is just returning. He tells me that the International Union of Pure and Applied Chemistry has been saved from collapse largely through the efforts of Sir William Pope, one of its earliest supporters. While everyone likes the idea of such an international union, the difficulties of keeping up a live contact between the different nations, and particularly between America and Europe, are obvious, and at one time it was feared that it might have to be dropped. However, the members have determined to carry on, and have set out a programme of actual work for the next twelve months which, if carried out, should do something to revive interest in the organisation.

Another prominent figure on board is Professor Jocelyn Thorpe. As he sits in a corner of the smoke-room, smoothly pulling at his cigar, he is quite unconscious that his name is being taken in vain in the other corner. If he knew, I fancy it would not greatly disturb him.

As I write, we are nearing Queenstown, where these notes go into the post-bag. The next instalment will be from Quebec, where we are due to land a week to-day. Everything so far is proceeding according to plan.

F. E. H.

## The London Fuel Conference

### Programme of Arrangements

THE time table of the Fuel Conference (a sectional meeting of the World Power Conference) to be held at the Imperial Institute, London, during the period September 24-October 6, has been issued (complete as at July 1, 1928). The Earl of Balfour is acting as honorary president, and Lord Melchett as president. The papers contributed are arranged in the following sections:—

A—The Coal Industry, Economic and General Considerations; B—Sampling and Testing of Solid Fuels; C—Coal Treatment, Cleaning, Drying and Briquetting; D—Storage and Handling of Solid Fuels by the User; E—The Oil Industry, Economic and General Considerations; F—Composition, Classification, Preparation, Storage and Handling of Liquid Fuels; G—The Carbonisation Industry, Economic and General Considerations; H—Composition, Classification, Preparation, Storage and Handling of Gaseous Fuels and of the Products of the Carbonisation Industry; J—Utilisation of Fuels for Steam Generation and the Production of Electricity; K—Utilisation of Fuels, including Electricity, for Industrial Furnace Work; L—Utilisation of Fuels, including Electricity, for Domestic Purposes; M—Pulverised Fuel; N—Internal Combustion Engines; O—Transmission of Power; P—Transmission of Power; Q—Low-Temperature Carbonisation; R—Peat; S—Power Alcohol; T—Training of Fuel Technicians; V—Organisations Concerned with the Efficient Use of Fuel in Industry; W—Economic Possibilities in the Better Co-ordination of Fuel Utilisation; X—Technical Data on Fuel.

### Some British Papers

The papers to be read include contributions from all over the world. Among those by British authors are:—"The Constitution of Coal" (Professor R. V. Wheeler); various papers on "The Cleaning of Coal," by Dr. W. R. Chapman and others; "The Storage and Handling of Solid Fuels by the User" (R. K. Stockwell); "The Economics of the Oil Industry, including the Influence of By-Products" (E. H. Davenport); various papers on oil distillation, refining and cracking (Dr. A. E. Dunstand and J. Kewley); various papers on coke and gas; "The Fundamental Aspects of Combustion" (Professor W. A. Bone, F.R.S., Professor G. I. Finch and Dr. D. T. A. Townsend); "The Purification of Coal Gas" (C. Cooper); "By-Product Recovery in the Carbonisation Industries" (P. Parrish); "Industrial Heating by Solid, Liquid and Gaseous Fuels" (Sir Robert Hatfield F.R.S., and R. J. Sarjant); "Low-Temperature Carbonisation" (Dr. C. H. Lander and Dr. F. S. Sinnatt); "Alcohol for Fuel Purposes" (Sir Frederick L. Nathan); "A Survey of the Organisations concerned with the Efficient Use of Fuel in Industry" (E. C. Evans); "A Fuel Policy" (Sir Arthur Duckham); "Technical Data on Fuel" (H. M. Spiers); "The Training of the Fuel Technician" (Professor J. W. Cobb).

### Diary of Arrangements

On Monday, September 24, there will be a meeting of the International Executive Council in the morning, and at 3 p.m. the official opening of the Conference will take place. In the evening, there will be a banquet at the Connaught Rooms. Thereafter, the various sections will hold their sessions, the daily times of meeting being 10.15 a.m.-12.45 p.m. and 2.30 p.m.-5 p.m. Arrangements already made include visits to the Port of London (September 27); to gas works and power stations (October 2); and to H.M. Fuel Research Station and the Anglo-Persian Oil Co.'s laboratories (October 4). For Saturday, September 29, excursions are to be arranged, and on Saturday, October 6, the Conference having ended, visits to places outside London of interest to fuel technologists will probably take place.

Any applicant, subject to the approval of the executive committee, is entitled to become a member of the Fuel Conference, 1928, World Power Conference, on payment of 30 shillings, with a special reduced membership fee of 20 shillings for members of participating institutions and associations. All communications and applications for membership are to be addressed to the Secretaries, Fuel Conference, 1928, World Power Conference, 36, Kingsway, London, W.C.2.

## Professor Armstrong on Ethyl Petrol

### Criticism of the Interim Report

In the course of a letter published in *The Times* (August 14), Professor H. E. Armstrong criticises the findings of the Departmental Committee on Ethyl Petrol, the interim report of which was recently issued (and noted in THE CHEMICAL AGE of August 4).

"The interim report," states Professor Armstrong, "is an ingenious but unsatisfactory document; we are told nothing that has been newly ascertained. The Committee, in effect, has taken American opinion and accepted American findings, without critically sifting their sufficiency. The evidence considered seems to have been surprisingly limited and partial. Sir William Pope's timely protest, published in your columns, which led to the inquiry, is therefore in no way met. The position is, indeed, a strange one. The Ministry of Health is allowing, if not encouraging, the widespread use of 'a very poisonous substance'—the words of the report—containing lead, while it prevents, for idealistic reasons, the addition to foods such as minimal cream of amounts of, we may almost say, an indispensable antiseptic in no way proved to be deleterious to most of us. Moreover, the Department smiles upon such use, notwithstanding the prolonged and persistent efforts of another State Department, the Home Office, to deprive the public of the use of lead even in paint. It will be remembered, so strong was the feeling against lead, in that Office, that one of the seniors on its staff, Dr. Legge, actually resigned his post because legislation to this end was not carried through.

### Real Nature of Lead Tetraethyl Poisoning

"All my life I have been a student of gaseous explosions. It so happens that I have also been a close observer during the past 20 years both of lead poisoning and of poisoning by volatile liquids. I was an active participant in the prolonged Home Office inquiry into lead paints, and one of the chief disputants, during a month, at the League of Nations Labour Conference at Geneva in 1921, as a defender of the use of lead in paints. I believe I was the first to insist that the symptoms commonly regarded by the medical experts as due to lead were, in reality, caused by the volatile solvent in the paint—not by lead.

"In their inquiry the Americans seem to have emphasised lead and to have thought of and tested for little else but lead. In my opinion, lead tetraethide is not dangerous primarily as a lead poison; whether it be one, in the long run, we do not know. It is, I believe, a poison in itself, acting, as a whole, as a neutral liquid poison akin to the solvents used in varnishing fabrics, which have been the cause of much serious poisoning in the past. I doubt if the doctors know the least what are the symptoms to which it gives rise specifically. It has a special affinity for fatty tissues and is likely to pass into the nervous system and brain.

"The Committee ought to have called me as a witness. Several of its members must be aware that I, more than any other chemist, have given special attention to the issues raised by the use of a 'very poisonous substance' of the character of lead tetraethide. Ours, however, is a country in which experience is taboo. I have made experiments with the pure material. From the results I infer that, although it acts slowly owing to its high boiling point, if inhaled it would be a virulent poison.

"I am prepared to let the garage folk and motorists take care of themselves and poison themselves, if they so will, with lead tetraethide. Yet, as a member of the public at large, I do most strongly object to lead, pure and simple, being emitted at me from cars about me: it is a cumulative poison; the ordinary stench from a car is bad enough; advisedly to put more poison into it is inexcusable and indefensible."

### London Docks Fire

A SERIOUS outbreak of fire occurred at the West India Dock, London, early on Tuesday morning, in the hold of S.S. *Annavore*, a Norwegian vessel, with a cargo of turpentine, resin, chemicals and timber. In response to a call, thirty-two motor appliances and two floats were soon on the scene. The firemen, numbering about 200, were obliged to wear masks. It was found necessary to scuttle the vessel. Hold number 2 was burned out, and the whole of the cargo is stated to have been badly damaged.

## Chemical Trade Returns for July

### Further Advance in Exports

THE Board of Trade Returns for July indicate that chemicals, drugs, dyes and colours were imported to the value of £1,125,205, an increase of £15,369 in the corresponding month of 1927 and a decrease of £163,655 on 1926; exports were valued at £2,074,375, an increase of £261,994 on 1927 and a decrease of £61,686 on 1926; re-exports were valued at £87,525, an increase of £28,599 on 1927 and an increase of

£2,967 on 1926. Imports for the first seven months of the year were valued at £8,987,902, a decrease of £190,185 compared with the parallel period in 1927 and an increase of £172,590 on 1926; exports were valued at £14,900,269, an increase of £1,558,321 on 1927 and an increase of £1,260,185 on 1926; re-exports were valued at £572,871, an increase of £27,009 on 1927 and a decrease of £51,782 on 1926. Following are the detailed returns:—

	Imports				Exports			
	Quantities		Value		Quantities		Value	
	Month ended		Month ended		Month ended		Month ended	
	July 31	1928.	July 31	1928.				
CHEMICAL MANUFACTURES AND PRODUCTS—								
Acid Acetic.....tons	955	1,509	41,391	67,020	Bleaching Powder (Chloride of Lime).....cwt.	31,183	64,438	13,384 23,766
Acid Tartaric ....cwt.	2,848	6,532	14,109	23,983	COAL TAR PRODUCTS—			
Bleaching Materials ..	10,041	9,503	8,845	8,583	Anthracene .....cwt.	—	—	—
Borax.....	11,440	9,871	12,502	8,150	Benzol and Toluol ..gall.	296	874,123	34 46,436
Calcium Carbide.... ..	55,078	54,840	34,891	33,219	Carbolic Acid.....cwt.	11,957	19,099	27,490 32,790
Coal Tar Products value	—	—	25,207	52,458	Naphtha .....gall.	730	5,321	119 434
Glycerine Crude....cwt.	34	49	150	150	Naphthalene .....cwt.	1,127	2,969	873 1,798
Glycerine Distilled. ..	604	459	2,899	1,324	Tar Oil, Creosote Oil, etc. ....gall.	1,314,054	3,742,017	49,653 133,249
Red Lead and Orange Lead.....cwt.	4,825	3,135	8,317	4,300	Other Sorts.....cwt.	122,941	62,739	47,471 33,670
Nickel Oxide..... ..	—	111	—	480	Total ... value	—	—	125,646 248,377
Potassium Nitrate (Salt-petre) .....cwt.	11,829	11,321	13,350	13,212	Copper, Sulphate of...tons	3,163	2,400	71,553 57,039
All other Compounds ..	91,702	54,524	53,076	36,920	Disinfectants, etc. ....cwt.	31,189	29,708	79,760 72,890
Sodium Nitrate .. ..	95,715	79,522	61,411	44,796	Glycerine, Crude .... ..	1,287	22	4,153 57
All other Compounds ..	54,489	39,525	31,450	20,303	Glycerine, Distilled.. ..	2,382	10,113	12,810 38,715
Tartar, Cream of .. ..	3,793	2,784	15,301	12,331	Total .... ..	3,669	10,135	16,963 38,772
Zinc Oxide.....tons	1,090	961	35,197	30,577	POTASSIUM COMPOUNDS—			
All other Sorts....value	—	—	231,022	207,332	Chromate and Bi-chromate .....cwt.	1,466	2,758	2,998 5,165
DRUGS, MEDICINES, ETC.—					Nitrate (Salt-petre) .. ..	1,665	1,304	3,205 2,458
Quinine and Quinine Salts .....oz.	124,842	177,266	9,668	11,335	All other Sorts ... ..	2,826	4,257	15,839 12,771
Bark Cinchona, etc. cwt.	1,942	1,418	7,972	5,929	Total .... ..	5,957	8,319	22,042 20,394
Other Sorts.....value	—	—	114,874	166,084	SODIUM COMPOUNDS—			
DYES AND DYESTUFFS, ETC.—					Carbonate .....cwt.	503,418	323,541	151,953 96,219
Intermediate Coal Tar Products .....cwt.	—	—	—	—	Caustic..... ..	156,336	224,434	111,812 145,167
Alizarine .. ..	30	117	1,106	3,923	Chromate and Bi-chromate .....cwt.	2,610	2,682	3,798 3,818
Indigo, Synthetic .. ..	—	—	—	—	Sulphate, including Salt Cake .. ..	68,961	121,460	9,977 14,141
Other Sorts .. ..	3,527	3,325	86,907	78,357	All other Sorts ... ..	50,324	46,569	60,607 47,528
Cutch .. ..	3,528	6,009	5,399	8,609	Total .... ..	781,658	718,686	338,147 306,873
All other Sorts .. ..	1,944	2,733	6,885	8,726	Zinc Oxide.....tons	99	92	4,214 3,271
Indigo, Natural .. ..	—	—	—	—	All other Sorts....Value	—	—	245,102 274,516
Extracts for Tanning.. ..	110,700	96,412	114,773	105,975	Total of Chemical Manufactures and Products ...	—	—	1,180,782 1,421,850
PAINTERS' COLOURS AND MATERIALS, not elsewhere specified—					DRUGS, MEDICINES, ETC.—			
Barytes, ground, and Blanc Fixe .. ..cwt.	71,994	61,163	15,873	13,073	Quinine and Quinine Salts .....oz.	229,755	233,551	23,076 23,065
White Lead, (dry) .. ..	12,096	10,577	19,894	16,410	All other Sorts....value	—	—	218,705 221,069
All other Sorts....	102,177	98,761	137,307	135,586	Total .... ..	—	—	241,841 244,134
Total of Chemicals, Drugs, Dyes, and Colours .. ..value	—	—	1,109,836	1,125,205	DYES AND DYESTUFFS—			
CHEMICAL MANUFACTURES AND PRODUCTS—					Products of Coal Tar cwt.	6,535	7,385	55,191 64,978
Acid Sulphuric ....cwt.	8,429	8,222	4,429	4,555	Other Sorts .. ..	4,000	8,272	4,753 7,203
Acid Tartaric .. ..	2,742	1,613	18,801	10,327	Total .... ..	10,535	15,657	59,944 72,181
Ammonium Chloride (Muriate) .. ..tons	458	377	9,729	7,102	PAINTERS' COLOURS AND MATERIALS—			
Ammonium Sulphate— To Spain and Canaries tons	10,928	10,729	105,113	97,576	Barytes, ground, and Blanc Fixe.....cwt.	923	5,240	434 2,821
.. Italy..... ..	107	471	1,000	4,263	White Lead (dry) .. ..	4,055	6,400	7,800 11,356
.. Dutch East Indies tons	163	88	1,618	853	Paints and Colours in Paste form.....cwt.	47,176	38,140	103,130 78,203
.. Japan .. ..	5,138	10,890	50,949	101,556	Paints and Enamels Prepared .. ..cwt.	31,227	43,358	110,458 141,808
.. British West India Islands and British Guiana tons	614	1,045	6,149	9,925	All other Sorts .. ..	63,648	55,975	107,992 102,022
.. Other Countries ..	6,478	14,588	66,183	139,795	Total .... ..	147,029	149,113	329,814 336,210
Total .... ..	23,428	37,811	231,012	353,968	Total of Chemicals, Drugs, Dyes and Colours .. ..value	—	—	1,812,381 2,074,375

Re-Exports		Value.		
Quantities.	Month ended	Month ended		
	July 31,	July 31,	£	
1927	1928	1927	1928	
CHEMICAL MANUFACTURES AND PRODUCTS—				
Acid Tartaric . . . . . cwt.	243	111	1,607	843
Borax . . . . .	100	80	104	68
Coal Tar Products value	—	—	19	52
Potassium Nitrate (Salt-petre) . . . . . cwt.	43	149	68	250
Sodium Nitrate . . . . .	100	1,304	68	714
Tartar, Cream of . . . . .	313	230	1,326	1,178
All other Sorts . . . . . value	—	—	11,833	35,161
DRUGS, MEDICINES, ETC.—				
Quinine and Quinine Salts . . . . . oz.	11,309	18,097	1,186	1,638
Bark Cinchona . . . . . cwt.	593	538	4,495	4,337
All other Sorts . . . . . value	—	—	26,390	31,347
DYES AND DYESTUFFS—				
Cutch . . . . . cwt.	643	1,048	1,020	1,660
All other Sorts . . . . .	447	129	2,050	1,684
Indigo, Natural . . . . .	55	2	1,513	70
Extracts for Tanning . . . . . cwt.	1,157	515	1,851	667
PAINTERS' COLOURS AND MATERIALS . . . . . cwt.	1,144	2,450	4,698	7,768
Total of Chemicals, Drugs, Dyes and Colours . . . . . value	—	—	58,926	87,525

## Dividends in German Chemical Industry

### Interesting Figures

THE Verein zur Wahrung der Interessen der Chemischen Industrie Deutschlands, through its organ, *Die Chemische Industrie*, has just published an analysis of the financial results achieved in 1927 by 115 German companies. The relation between the capital invested and the total paid in dividends has been ascertained. In view of the commanding position of the I.G. Farbenindustrie A.-G. in German chemical industry, results have been calculated both with the inclusion and exclusion of this concern. In 1927, the percentage of the 115 firms not paying a dividend was 28·9, as compared with 55·8 and 70 in 1926 and 1925 respectively. The dividend paid by the 115 firms as a whole, including the I.G., in 1927, amounted to 9·4 per cent., as compared with 6·6 per cent. in each of the two preceding years. Leaving the I.G. out of account, however, the dividends amounted to 6·8, 3·7 and 3·1 in the years 1927, 1926, and 1925 respectively.

The great importance to German chemical industry of exports is shown by the fact that these amounted to 1,162,521 thousand marks in 1927, as compared with 1,020,296 thousand marks and 937,306 thousand marks in 1926 and 1925. In 1927, the ratio of chemical exports to total exports from Germany rose to 11·4 per cent., as compared with 10·4 and 10·6 respectively in the two preceding years. In 1913, this ratio was only 9·1 per cent., so that the growing importance to Germany of the industry in the realm of exports can be seen. The increased export of nitrogenous fertilisers has, of course, played a great part in these developments.

With regard to the present year, the prospects are not so favourable. In the first quarter of 1928, German chemical exports were valued at 328 million marks, about equal to those of the last quarter of 1927. But in the second quarter of 1928 exports dropped to 295 million marks, and according to the German account it seems probable that this decline will continue. It should, however, be noted that for purposes of accurate comparison the figures for the various quarters of 1928 should be compared with those of the corresponding ones of 1927, which is not done by *Die Chemische Industrie*.

### Dr. Bergius on I.G. Developments

In a recent lecture on the hydrogenation of coal to the Netherlands Chemical Society, Dr. Bergius stated that the I.G. Farbenindustrie would not have incurred such an outlay on plant (for the Bergius process) and have continued to enlarge the scope of operations if there had been any reasonable doubt that oil could be produced profitably. He also mentioned improvements that had been made in the process by the I.G., in that they had made it possible to obtain oil from coal almost entirely in the form of benzine. The coal could in fact, be converted into heavy or light oils at will by arranging operations accordingly.

### "C.A." Queries

We receive so many inquiries from readers as to technical, industrial, and other points, that we have decided to make a selection for publication. In cases where the answers are of general interest, they will be published; in others, the answers will simply be passed on to the inquirers. Readers are invited to supply information on the subjects of the queries:—

110. (Breaking mixtures of compound fertilisers by blasting) — "I should be glad to know whether any reader of THE CHEMICAL AGE has tried the effect of blasting to break up mixtures of compound fertilisers (sulphate of ammonia, super, and potash salts) that have set hard. With any nitrate present it would, of course, be hazardous, but I should like to know whether any other ammonium salts that might be formed by decomposition with the other ingredients have been found in practice to be hazardous. It is not required to produce any pulverising, but simply to fissure the set mixture in the bins."

### Benn Brothers' Annual Meeting

#### The Record of a Prosperous Year

THE thirty-second annual general meeting of Benn Brothers, Ltd., was held at Bouvierie House, London, on Friday, August 10. Moving the adoption of the report, Sir Ernest Benn said that the gross profit for the year was nearly £1,000 better than a year ago, while the net profit was £2,400 better.

The balance sheet, he continued, was stronger than ever. The assets totalled £354,000. Ignoring altogether their goodwill of £79,000, and assuming that they paid off their creditors, including the bank £60,000, there remained in liquid assets, or assets that were at least worth the figures put upon them, a total of £215,000, or exactly the amount of the capital of the company. That was to say, their share capital was absolutely intact, reckoning nothing whatever for goodwill, which was, he ventured to suggest, the most valuable thing they possessed. If some of the recent flotations were any guide as to values, their goodwill was worth an immense amount of money, and the £3 a share, the figure at which recent transactions had taken place, was an under rather than an over-valuation.

They had done a good deal in the way of developing the central control of the business of the company and of its subsidiaries. In creating the new office of deputy chairman, and in stealing Mr. Gordon Robbins from *The Times* newspaper to fill that office, they did an even better stroke of work than they thought they were doing. They had taken another important step in the process of consolidation and development by relieving Mr. Crole-Rees of some of his departmental responsibilities and making him managing director.

#### Buyers and Sellers of Advertising Space

Ernest Benn, Ltd., while offering to them as its chief proprietors a prospect of profits and dividends, was also rendering them another very vital and less obvious service. That company was a very big buyer of advertising space. It had increased its turnover in books from £80,000 two or three years ago to nearly a quarter of a million sterling, and this increase could be very largely attributed to judicious advertising. Thus a situation arose in which Bouvierie House, through its trade papers, was selling large quantities of advertising space, and through its book sales department was buying the same commodity.

A very important new development must be recorded in the foundation of the Trade Promotion Trust to enable retail traders to develop the instalment buying branch of the market. Since the date of the balance sheet another promising subsidiary had been launched. Encouraged by their experience with the Trade Promotion Trust, they had founded The Book Marketing Board. Their object was by the introduction of instalment buying to widen the book market and to render a belated, but a necessary and welcome, assistance to their excellent friends the booksellers.

Mr. Gordon Robbins seconded the resolution. The report and accounts were adopted, and the dividends as recommended (noted in the last issue of THE CHEMICAL AGE) were declared. On the motion of Mr. Sparks, seconded by Mr. J. A. Knivett, Mr. F. H. Elliott, Mr. A. R. Pain and Mr. E. Glanvill Benn were re-elected directors. Mr. Kirby moved, and Mr. Moolenaar seconded, the re-election of Messrs. Cassleton Elliott and Co. as auditors, and Mr. Welsford moved a cordial vote of thanks to the chairman, which was carried.

## From Week to Week

SIR MAX AND LADY MUSPRATT have returned to Liverpool from their Norway holiday.

MR. FELIX BRUNNER has purchased Rudloe Farm, Box, Wilts, an estate of 250 acres, where he intends to reside in future.

BRITISH CAPITALISTS are said to be interested in the experimental planting of 8,000 acres in Auckland Province, N.Z., with wood oil trees.

RECENT WILLS INCLUDE:—Mr. Charles Albert Knight, lately a director of Babcock and Wilcox, Ltd., £309,488 (net personally £307,928).

MR. C. V. CORLESS has resigned the position of general manager of the Mond Nickel mines and smelter after 25 years' service. He has been succeeded by Mr. Oliver Hall.

MR. H. L. CUPPLES, formerly associate chemist at the Fixed Nitrogen Research Laboratory, Washington, has joined the staff of the General Motors Corporation, Detroit.

THE PRODUCTION OF ARTIFICIAL RUBBER by polymerising diolefins by means of hydrogen peroxide is described by the I.G. Farbenindustrie A.-G. in Patent Specification 292,103 (see p. 145).

MR. R. L. ROBB (grassland adviser to Nitram, Ltd.) is on a visit to New Zealand, where arrangements have been made for meetings between him and the leading Government officials as well as prominent members of the agricultural education staff.

AN EXPLOSION, thought to be due to the ignition by a spark of fine dust, occurred on Thursday, August 9, at the Strood (Kent) factory of the British Oil and Cake Mills, Ltd., and a grinder, Alfred Carr, was severely burned and taken to hospital.

A SPECIAL CAR, said to be built on entirely new principles, has been constructed by the General American Tank Car Corporation for the transport of helium. The car weighs 200,000 lbs. The U.S. Navy Department has approved the model and ordered six such cars.

THE "LEAD INSTITUTE" now being organised by leading lead manufacturers in the United States is as yet in the embryonic stage, in its purposes as well as in its ultimate form, and even the name has not been definitely fixed. In all probability the fixing of prices will not come within its purview.

THE SOCIETY OF DYERS AND COLOURISTS has instituted a research with the object of determining the effect of perspiration on dyed fabrics, under the direction of Professor McSwiney, of Leeds University Medical Department. Mr. C. C. N. Vass will carry out the first investigation, which will deal with the chemical composition of human perspiration.

A CYLINDER believed to contain poison gas was found in a heap of scrap metal at premises of the Oidas Metals Co., Ltd., of Edmonton, on Wednesday, August 8. It was later removed to the Silvertown works of Imperial Chemical Industries, Ltd., where, on examination by Home Office representatives, it was found to contain chlorine.

THE STANDING COMMITTEE (General Merchandise) appointed by the Board of Trade have reported on their enquiry as to whether imported surgical, medical, dental and veterinary instruments and appliances, and dental supplies and furniture should be required to bear an indication of origin. The report is obtainable from the Stationery Office, or through any bookseller, price 2d. a copy.

A STUDY OF LOW-TEMPERATURE carbonization of Utah coal has been conducted by the United States Bureau of Mines, in co-operation with the Carnegie Institute of Technology and the National Coal Association. The results of the examination of the liquid portion of the tar and also the total tar soluble in the aqueous condensate are given in Bulletin 35, "Mining and Metallurgical Investigations," by R. L. Brown, organic chemist, Bureau of Mines, and B. F. Branting, research fellow, Carnegie Institute of Technology.

THE HAMBURG AUTHORITIES have investigated the report of the *Hamburger Volkszeitung* that the Stolzenburg Chemical Works had received further supplies of phosgene gas since that which caused the catastrophe in May was destroyed. They satisfied themselves that no fresh store of gas had been established at the works, but they discovered that Dr. Stolzenberg had received a steel container of phosgene of the sort used for commercial purposes. The fact that the works can receive more phosgene through "ordinary legal channels" inspired the *Berliner Tageblatt* to ask what was the use of all the trouble taken to get rid of the earlier supply.

ARTIFICIAL SILK NEWS.—The Hungarian artificial silk factory, the "Sárvári Kunstseidenfabrik," which closed down a few years ago, is to resume its activity.—The French Tubize Co. is to erect a large acetate silk factory in Italy.—It is believed that negotiations are taking place for a fusion between the Enka and Breda artificial silk concerns of Holland.—The I.G. Farbenindustrie and the Goldschmidt A.-G., in conjunction with an unnamed American group, are erecting a factory at Essen for the production of artificial silk.—The American subsidiary of Glanzstoff, the Glanzstoff Corporation of Johnson City, has started operations on a small scale, the present plant occupying 300 workers.

TWENTY-SIX GRAINS OF RADIUM were produced by the Union Minière du Haut-Katanga during 1927.

MADAME CURIE has been elected a vice-president of the League of Nations Commission for Intellectual Co-operation.

MR. J. ALLAN WOODBURN has been elected president of the Chemical, Metallurgical and Mining Society of South Africa.

VAN DEN BERGH's announce that on and after Monday, August 20, the registered office will be at 26, St. Martin's le Grand, London, E.C.1.

DR. T. H. BUTLER, managing director of the firm of Wm. Butler and Co. (Bristol), Ltd., has been elected president of the Bristol Chamber of Commerce and Shipping.

SODIUM SULPHATE DEPOSITS in the Kanagan district of America are being developed for use in the local pulp and paper industries. The deposits are said to be over 99 per cent. pure.

A FIRE, involving a purifying house, occurred at the Nine Elms works of the Gas Light and Coke Co. on Monday, and the building was extensively damaged before the outbreak was extinguished.

GEORGE ALCOCK, aged 20, and Tom Dillon, aged 30, of Liverpool, were both badly burned by falling into a vat of caustic soda at the works of Lunt and Co., Ltd., soap manufacturers, on Saturday, August 11.

CONTRACT FOR THE CONSTRUCTION of coke ovens and by-product plant has been placed by the Broken Hill Proprietary Co., of Newcastle, New South Wales, with the Coppee Co. (Gt. Britain) Ltd. The plant will cost about £1,000,000.

THE HEALTH DEPARTMENT and the Trade Mark Office of Cuba have agreed upon a regulation which will require the registration of trade marks of pharmaceutical products before a permit for their sale is granted by the Health Department.

FORMERLY PRACTICALLY A BRITISH MONOPOLY, sulphate of ammonia is now mainly imported to Barcelona from Germany. During 1927, 4,543 tons were imported from Germany, 1,672 tons from the United Kingdom, and 976 tons from Italy.

THE CONSTRUCTION of a \$1,000,000 chemical plant in Tacoma is announced by the Hooker Electro-Chemical Co., of New York. It is intended to have the plant in working order by January, 1929, production at first being limited to liquid chlorine and caustic soda.

FINALLY REVISED STATISTICS issued by the Mining, Metallurgical and Chemical Branch of the Dominion Bureau of Statistics indicate that the output of nickel in Canada in 1927 was 66,798,717 lbs., valued at \$15,262,171, as compared with 65,714,294 lbs. worth \$14,374,163 in 1926.

THE JAPANESE DEPARTMENT OF COMMERCE AND INDUSTRY has decided to ask again for appropriations rejected last year for aiding chemical industry. These include 210,000 yen for the encouragement of the soda-ash industry and 1,940,000 yen for aiding the manufacture of synthetic indigo. An appropriation of 250,000 yen for chemical industry research is also sought.

PROFESSOR JAMES W. MCBAIN, F.R.S., of Stanford University (U.S.A.), formerly professor of physical chemistry in the University of Bristol, is spending the summer in Europe. He was recently invested with the honorary degree of D.Sc. (Bristol). He will take part in the meeting of the British Association for the Advancement of Science at Glasgow, and will give a course of lectures on "Sorption" at the University of Wales, returning to the United States late in October.

ACCORDING TO THE general manager of the Algoma Steel Corporation, preliminary work has been begun on a new benzol plant at Sault Ste. Marie, Ontario. The contract, which has been awarded to the Wilputte Coke Oven Corporation of New York, calls for an expenditure of \$250,000. The industry is being located in the coke oven area at the mills, and the plant is the first to be constructed in connection with the building programme recently announced by the Lake Superior Corporation. The benzol, which is used as a motor fuel to "sweeten" petrol, will be made from a by-product of the coke ovens.

THE EASTERN CHEMICAL CO. (India) and the Dharamasi Morariji Chemical Co. have made representation to the Government of India requesting that protection may be extended to sulphuric acid, hydrochloric acid, nitric acid, magnesium sulphate, ferrous sulphate, potash alum, aluminium sulphate, sodium sulphide, zinc chloride, copper sulphate and glauber salts. The Government of India has decided to refer these representations to the Tariff Board for examination, along with any other of a similar nature which may be brought to its notice. Along with the question of extending protection to the manufacture of particular chemicals, the Tariff Board will examine the question of the removal of import duties on those chemicals which are used as materials in Indian industries.

### Obituary

H. WALKER WALLACE, vice-president of the Virginia-Carolina Chemical Co., on June 22, aged 50, at Richmond, Pa.

MR. HERBERT ECCLES, for many years chairman of the Briton Ferry Steel Co., and first chairman of the South Wales Siemens Steel Association, on Monday, August 13.

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A contribution to our knowledge of the catalysts used in the synthesis of higher hydrocarbons from water-gas. A. Erdely and A. W. Nash. *J.S.C.I.*, August 10, pp. 219-223 T.

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### German

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**GRAPHITE.**—On the knowledge and literature of graphite. Part II. E. Donath. *Chemiker-Zeitung*, August 4, pp. 600-611.

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**SUGAR.**—Recovery of molasses, potassium salts and other alkaline compounds in the sugar industry. T. G. Arnal. *Chimie et Industrie*, July, pp. 27-28.

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The following information is prepared from published Patent Specifications and from the Illustrated Official Journal (Patents) by permission of the Controller to H.M. Stationery Office. Printed copies of full Patent Specifications accepted may be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, at 1s. each.

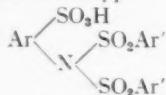
### Abstracts of Complete Specifications

293,717. TREATING OILS OR FATS OR MIXTURES OF THE SAME OR FATTY ACIDS FOR THE PRODUCTION OF SULPHURIC ACID COMPOUNDS. PROCESS FOR. E. C. R. Marks, London. From Chemische Fabrik Stockhausen and Cie, 25, Bäkerpfad, Crefeld, Germany. Application date, April 6, 1927.

These compounds are obtained by treating animal or vegetable oils and fats or fatty acids with concentrated sulphuric acid in excess of 35 per cent. The acid is added as quickly as possible, and the mixture is cooled to prevent the temperature from rising above 10°—15° C. It is found by increasing the quantity of acid up to 100 per cent, the products obtained show a much greater stability to acids than turkey red oils, and they are insensitive to salt solutions, especially to magnesium sulphate and to lime, so that they may be used in acid dye baths as wetting or levelling agents. An example of the treatment of castor oil is given.

293,781. N-DIARYLSULPHONYL DERIVATIVES OF ARYLAMINE-SULPHONIC ACIDS. British Dyestuffs Corporation, Ltd., Hexagon House, Blackley, Manchester, and A. J. Hailwood, Crumpsall Vale Chemical Works, Blackley, Manchester. Application date, April 12, 1927.

These compounds are of the type



in which Ar, Ar' and Ar'' are aromatic residues. They are made by the interaction of an arylsulphonyl halide and sulphonated primary arylamine or with a sulphonated arylsulphon arylamide of the type



Examples are given of the treatment of sodium sulphanilate or metanilate, with *p*-toluene-sulphonchloride to obtain ditolylsulphonyl-sulphanilic acid or ditolylsulphonyl-metanilic acid. The products are good tanning agents and are useful in the preparation of dyes and pigments in finely divided form.

293,896. PREPARATION OF SOLID BODIES IN A FINELY DIVIDED STATE. PROCESS FOR. British Dyestuffs Corporation, Ltd., Hexagon House, Blackley, Manchester, A. J. Hailwood and A. Shepherdson, Crumpsall Vale Chemical Works, Blackley, Manchester. Application date, April 11, 1927.

In the preparation of very finely divided solids by means of a colloid mill the size and output of the mill are limited owing to its high speed, and the power cost is high. It has now been found that a very fine subdivision can be obtained by stirring a quantity of the roughly ground product and a liquid with a relatively large amount of another finely divided solid of greater hardness. The finely divided solid may be a metal such as iron, zinc, or copper, or a non-metal such as sand or silica. The added solid should be itself very finely divided. The rate of subdivision may be accelerated by the addition of dispersal agents or colloidal substances which are soluble in the liquid used, e.g., the products obtained by the moderated oxidation of sulphite cellulose lye with nitric acid. The degree of subdivision is affected by the time of mixing and the nature of the added solid, liquid, and colloid. The mixing may be effected by a revolving agitator, or by passage through pipes, or over surfaces. If iron is used as the added solid, it may subsequently be removed magnetically. When separating the added solid, the mixture is largely diluted to prevent separation also of the dispersed material. The protective colloid may be sodium lysalbinate or the alkaline solution of the amidated sulphite cellulose pitch described in Specification No. 286,808. (See THE CHEMICAL AGE, Vol. XVIII, p. 346). Examples are given of the treatment of indigo, indanthrone, 1-amino-2-methyl-anthraquinone, wood charcoal, pyranthrone, etc.

293,906. HYDROCARBONS. MANUFACTURE AND PRODUCTION OF. J. Y. Johnson, London. From I.G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. Application date, March 10, 1927.

Hydrocarbons obtained by destructive hydrogenation have been treated by means of catalysts to dehydrogenate them and obtain more valuable products. It is now found that these catalysts, i.e., oxides of metals of the sixth group of the periodic system, either alone or with oxides or of elements of the third and fourth groups or active charcoal are also suitable for improving by dehydrogenation hydrocarbons obtained from cracking processes. Such hydrocarbons when employed as motor fuels are rendered less liable to knocking. The process is also applicable to hydrocarbons of any other origin containing cycloparaffins or naphthenes.

293,924. AROYLATING AGENTS, MANUFACTURE AND APPLICATION OF. British Dyestuffs Corporation, Ltd., Hexagon House, Blackley, Manchester, H. M. Bunbury and A. Shepherdson, Crumpsall Vale Chemical Works, Blackley, Manchester. Application date, April 26, 1927.

Benzoyl chloride or benzoic anhydride is obtained when benzotrichloride and benzoic acid are heated together in a high boiling solvent such as nitrobenzene with or without a catalyst. The solution of benzoyl chloride or anhydride obtained can be used directly for the purpose of benzoylating, without purification or isolation. Substituted benzotrichlorides, e.g., alkoxy benzotrichloride obtained by side chain chlorination of cresol alkyl ethers react with the corresponding acids under similar conditions. Examples are given of the preparation of benzoylation mixtures containing benzoyl chloride or benzoic anhydride, and the benzoylation of 1:4-diaminoanthraquinone, 4:4'-diamino-1:1'-dianthrimide, and leuco 1:4-diaminoanthraquinone.

294,037. OXIDISING ETHYL ALCOHOL. PROCESS FOR. Holzverkohlungs-Industrie Akt.-Ges., Konstanz i.B. Germany, and O. Fuchs, 8, Gottlieberstrasse, Wollmatingen bei Konstanz, Germany. Application date, November 14, 1927.

A mixture of ethyl alcohol and gases containing oxygen is catalytically converted into acetaldehyde, and water is removed as far as possible from the reaction gases by cooling. The gases are then treated with anhydrous solvents to obtain acetaldehyde. The cooled aqueous condensate can be used for further washing of the reaction gases. The solvents used are preferably those which allow further treatment of the aldehyde. If the aldehyde is to be converted into polymerisation products, e.g., aldol or paraldehyde, the latter may be employed as a solvent. If the aldehyde is converted into acetic acid, the latter is used as a solvent for the acetaldehyde. The alcohol used as starting substance may contain a large proportion of water, so that catalysts can be used which would cause side reactions when treating high percentage alcohols. A suitable catalyst is silver in finely divided form. Some examples are given.

NOTE.—Abstracts of the following specifications which are now accepted, appeared in THE CHEMICAL AGE when they became open to inspection under the International Convention: 267,121 (Compagnie Nationale de Matieres Colorantes et Manufactures de Produits Chimiques du Nord Reunies Etablissements Kuhlmann) relating to intermediate products and vat dyestuffs from diaryl perylenes, see Vol. XVI, p. 487; 269,522 (I.G. Farbenindustrie Akt.-Ges.) relating to dyestuffs containing chromium, see Vol. XVI, p. 605; 269,593 (I.G. Farbenindustrie Akt.-Ges.) relating to gaseous olefines and liquid hydrocarbons from tars, mineral oils, and similar hydrocarbons, see Vol. XVII, p. 13; 272,539 (I.G. Farbenindustrie Akt.-Ges.) relating to destructive hydrogenation of coal, tars, mineral oil, etc., see Vol. XVII, p. 173; 282,387 (A. L. Feild) relating to stainless iron, see Vol. XVIII, p. 23 (Metallurgical Section).

**International Specifications not yet Accepted**

292,066. OLEFINE OXIDES. I.G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. International Convention date, June 11, 1927.

Gas containing ethylene, propylene, or butylene is treated with hypochlorous acid to form the chlorhydrins, which are treated with alkalies, such as milk of lime, to produce the olefine oxides. The oxides are fractionally distilled under increased pressure to separate them.

292,068 and 292,098. FERTILISERS. I.G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. International Convention dates, June 11 and 13, 1927.

292,068. To obtain mixed fertilisers, ammonium sulphate is dissolved in a mixture of sulphuric acid and phosphoric acid, and potassium chloride in acid while the mixture is being sprayed by means of air and ammonia.

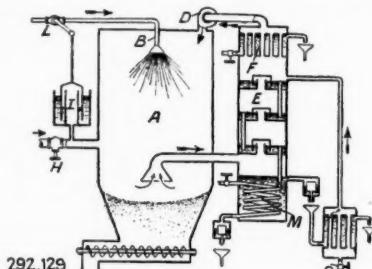
292,098. Urea is heated till ammonia ceases to be evolved, and the product used as a fertiliser or constituent of mixed fertilisers, or it may be separated into its constituents which can be used as fertilisers.

292,103. ARTIFICIAL RUBBER. I.G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. International Convention date, June 13, 1927.

Artificial rubber is obtained by polymerizing diolefines emulsified in a suitable liquid, by means of hydrogen peroxide with or without polymerizing agents such as viscous liquids, protein substances, mixtures which establish a definite hydrogen ion concentration in the dispersion agent, or electrolytes. The emulsions may be prepared with proteids, milk, dextrine, soaps, or sulphonates. An example is given.

292,129. AMMONIUM SALTS. Montecatini Soc. Generale per l'Industria Mineraria ed Agricola, 35, Foro Bonaparte, Milan, Italy. International Convention date, June 14, 1927.

Ammonia gas is treated with a spray of sulphuric acid of such concentration that the heat of the reaction vaporises the



water and leaves a dry salt. The acid is sprayed at B into a chamber A, and the gases are circulated upwards through a column E and cooler F, which condenses the water vapour, back to the chamber A. Ammonia gas may be supplied through pipe H, and its pressure may act through a floating bell I to regulate the supply of acid through valve L. Alternatively, aqueous ammonia may be supplied through pipe P to a heat exchanger supplied with hot water from the base of the column E, and thence to the upper part of the column E.

**LATEST NOTIFICATIONS.**

- 294,621. Manufacture of turkey-red oils and similar preparations. Erba Akt.-Ges. July 28, 1927.  
 294,625. Process for the production of trinitrotoluene. Akt.-Ges. Lignose. July 29, 1927.  
 294,626. Process for concentrating aqueous acetic acid. I.G. Farbenindustrie Akt.-Ges. July 29, 1927.  
 294,526. Process of purifying and decolorising resins with resorcinol. Newport Co. July 25, 1927.  
 294,602. Process for the preparation of the lactone of 14-oxy-tetradecane-1-carboxyl acid. Soc. Anon. M. Naef et Cie. July 27, 1927.  
 294,572. Manufacture and production of valuable products from carbohydrates and the like. Traube, W. July 26, 1927.  
 294,539. Refining of hydrocarbons. Aktiebolaget Separator-Nobel. July 25, 1927.  
 294,550. Manufacture of condensation products of the anthraquinone series. I.G. Farbenindustrie Akt.-Ges. July 25, 1927.  
 294,551. Treatment of hydrated cellulose. I.G. Farbenindustrie Akt.-Ges. July 25, 1927.

- 294,650. Manufacture of germ gland hormones from vegetable organisms. Schering-Kahlbaum Akt.-Ges. July 29, 1927.  
 294,651. Manufacture of physiologically active substances. Schering-Kahlbaum Akt.-Ges. July 29, 1927.  
 294,580. Production of hydrogen. Gasverarbeitungsges. July 26, 1927.  
 294,611. Process for the separation of gas mixtures. Ges. für Linde's Eismaschinen Akt.-Ges. July 27, 1927.  
 294,582. Manufacture of quaternary ammonium compounds. Soc. of Chemical Industry in Basle. July 26, 1927.  
 294,583. Manufacture of azo-dyestuffs, and the application thereof. Soc. of Chemical Industry in Basle. July 26, 1927.  
 294,654. Manufacture of a fertilizer. I.G. Farbenindustrie Akt.-Ges. July 29, 1927.  
 294,655. Process for extracting halogens and precious metals from sea-water. Bardt, H. July 29, 1927.  
 294,584. Process and apparatus for the preparation of agglomerated solid carbon dioxide. Hessling, W. July 26, 1927.  
 294,614. Process and apparatus for the preparation of agglomerated solid carbon dioxide. Hessling, W. July 27, 1927.  
 294,883. Manufacture of azo-dyestuffs. Soc. of Chemical Industry in Basle. July 30, 1927.  
 294,661. Manufacture of synthetic rubber. I.G. Farbenindustrie Akt.-Ges. July 28, 1927.  
 294,889. Manufacture of aromatic oxaldehydes. I.G. Farbenindustrie Akt.-Ges. July 30, 1927.  
 294,892. Process for obtaining high-boiling organic acids from their mixtures with high-boiling oils. Standard Oil Development Co. July 30, 1927.  
 294,975. Contact sulphuric acid process. Selden Co. August 3, 1927.  
 295,024. Alkyloamine salts of aliphatic acids and sulphonated fatty acids. Du Pont de Nemours and Co., E. I. August 4, 1927.  
 295,025. Vat assistant for use in dyeing. Du Pont de Nemours and Co., E. I. August 4, 1927.  
 295,032. Manufacture of strongly basic azo-dyestuffs. Geigy Akt.-Ges. J. R. August 6, 1927.  
 294,986. Manufacture of acid wool dyestuffs. I.G. Farbenindustrie Akt.-Ges. August 3, 1927.  
 295,033. Process for the catalytic hydrogenation of aromatic bases. I.G. Farbenindustrie Akt.-Ges. August 6, 1927.  
 294,963. Manufacture of artificial rubber and rubber-like masses. I.G. Farbenindustrie Akt.-Ges. August 2, 1927.  
 295,050. Process for the manufacture of a diazo compound and o-dyestuffs derived therefrom. Compagnie Nationale de Matières Colorantes et Manufactures de Produits Chimiques du Nord Réunies Etablissements Kuhlmann. August 5, 1927.

**Specifications Accepted with Date of Application**

- 270,293. Insoluble colouring materials. Process for producing—in a state of fine dispersion. I.G. Farbenindustrie Akt.-Ges. April 28, 1926.  
 270,339. Derivatives of substituted quinoline carboxylic acids. Manufacture of. Soc. of Chemical Industry in Basle. April 30, 1926.  
 271,037. Condensation products of urea or its derivatives and formaldehyde. Process for the manufacture of. Kunstharsfabrik Dr. Fritz Pollak Ges. May 15, 1926.  
 275,662. Destructive hydrogenation of carbonaceous materials. I.G. Farbenindustrie Akt.-Ges. August 7, 1926.  
 276,659. Sulphuric acid. Manufacture of. H. Petersen. August 28, 1926.  
 281,247. Motor fuels. Process for the manufacture and production of. I.G. Farbenindustrie Akt.-Ges. November 26, 1926.  
 282,001. Para-amino-ortho-benzoyl-benzoic acid. Process of making. Newport Co. December 8, 1926.  
 289,823. Exothermic chemical reactions. Process for carrying out. Soc. l'Air Liquide, Soc. Anon. pour l'Etude et l'Exploitation des Procédés G. Claude. August 9, 1926.  
 294,494. Treatment of hydrocarbons with electric arcs. J. Y. Johnson. (I.G. Farbenindustrie Akt.-Ges.) January 24, 1927.  
 294,507. Sulphuro-anhydride compounds of tertiary bases. E. G. Beckett, J. E. G. Harris, B. Wylam, J. Thomas, and Scottish Dyes, Ltd. February 25, 1927.  
 294,557. Liquid and gaseous hydrocarbons of low boiling point from mineral and other oils, tars, and the like. Production of. J. Y. Johnson. (I.G. Farbenindustrie Akt.-Ges.) April 21, 1927.  
 294,672. Intermediates and dyestuffs. Production of. L. J. Hooley, J. Thomas, and Scottish Dyes, Ltd. January 29, 1927.  
 294,681. Siliceous materials. Treatment of. P. Spence and Sons Ltd., T. J. I. Craig, and A. Kirkham. April 28, 1927.  
 294,703. Extraction of tin from slime tin, tin-bearing ores, and other materials containing tin. F. L. Wilder, E. Morris, E. Schiff, and E. S. King. February 6, 1928.  
 294,735. Calcium and magnesium salts of eugenol. Manufacture of. V. H. Kirkham and L. W. Raymond. May 24, 1927.

- 294,743. Dyestuff containing chromium. Manufacture and production of. J. Y. Johnson. (*I.G. Farbenindustrie Akt.-Ges.*) June 10, 1927.  
 294,759. Carbon from carbon monoxide. Manufacture of. Cassel Cyanide Co., Ltd., and T. Ewan. July 5, 1927.  
 294,787. Ethylene. Process for the production of. J. Y. Johnson. (*I.G. Farbenindustrie Akt.-Ges.*) August 27, 1927.  
 294,795. Metallurgical process. Vacuumschmelze Ges., H. Gruber, W. Rohn, and O. H. Weber. September 22, 1927.  
 294,868. Solvent treatment of copper ores. Anglo American Corporation of South Africa, Ltd. December 7, 1927.

#### Applications for Patents

- Allen, S. G. Rectifying mixed gases. 22,604. August 3. (United States, January 3, 1927.)  
 Barnes, R. S., Harris, J. E. G., Scottish Dyes, Ltd., Thomas, J., and Wylam, B. Dyes, etc. 23,219. August 11.  
 Bataafsche Petroleum Maatschappij and Elkington, H. D. Process for absorbing ethylene, etc., by sulphuric acid. 23,198. August 11.  
 Baumgartner, E. Manufacture of chromic compounds. 22,409. August 2. (France, August 2, 1927.)  
 Benkwitz, P. Vessels for containing gas under pressure. 22,289. August 1. (Germany, August 1, 1927.)  
 British Celanese, Ltd., Ellis, G. H., Kirk, E. W. and Olpin, H. C. Manufacture of organic compounds. 22,255. August 1.  
 British Celanese, Ltd., Ellis, G. H., Kirk, E. W. and Olpin, H. C. Treatment of cellulose derivatives. 22,256. August 1.  
 British Celanese, Ltd. Treatment of cellulose derivatives. 23,073. August 10. (United States, August 13, 1927.)  
 Brookes, W. D. Bleaching processes. 22,433. August 2.  
 Canadian Electro Products Co., Ltd. Process of making synthetic gummy, etc. material. 22,247. August 1. (Canada, August 9, 1927.)  
 Capps, A. W. Drying, etc. plant. 22,237. August 1.  
 Carmael, A., and I.G. Farbenindustrie Akt.-Ges. Manufacture of cellulose ethers. 23,039. August 9.  
 Carmael, A., and I.G. Farbenindustrie Akt.-Ges. Manufacture of artificial silk. 23,040. August 9.  
 Compagnie Nationale de Matières Colorantes et Manufactures de Produits Chimiques de Nord Réunies Etablissements Kuhlmann. Manufacture of diazo compounds, etc. 22,603. August 3. (France, August 5, 1927.)  
 Compagnie Nationale de Matières Colourantes et Manufactures de Produits Chimiques du Nord Réunies Etablissements Kuhlmann. Manufacture of chromed complexes of dyestuffs. 23,042. August 9. (France, March 15.)  
 Dicker, S. G. S. and Naamloze Venootschap Philips' Gloeilampenfabrieken. Preparation of alkali metals. 22,616. August 3.  
 Drechsler, H. A. E., Fairweather, D. A. W., Scottish Dyes, Ltd., and Thomas, J. Production of dyestuffs, intermediates, etc. 22,703. August 4.  
 Du Pont de Nemours and Co., E. I. Leuco-compounds of vat dyes. 22,926. August 8. (United States, August 19, 1927.)  
 Empire Gas and Fuel Co. Treating hydrocarbon gas, etc. 22,075. July 30. (United States, August 10, 1927.)  
 Garchey [née Godillat], B., and Garchey, L. A. Freezing-mixtures. 22,686. August 4. (Austria, October 14, 1927.)  
 Geigy Akt.-Ges., J. R. Manufacture of azo-dyestuff. 22,297. August 1. (Germany, August 6, 1927.)  
 Godel, A. Separation and recovery of gases, etc. by solid absorbents, etc. 22,533. August 3.  
 Gorgeot, H. P. J. C. and Soc. D'Exploitation Usines Metallurgiques Apparatus for evaporation purposes. 22,327. August 1.  
 Graesser-Monsanto Chemical Works, Ltd. and Hudson, D. P. Production of salts of aromatic hydroxyaldehydes. 22,654. August 4.  
 Hattfield, W. H. Acid-resisting alloys. 22,963. August 9.  
 Harding, Ltd., S. C. and P. and Lewch, W. P. Manufacture of a diazotizable base, etc. 22,418. July 2.  
 I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of highly-halogenated derivatives of pyranthrone. 22,039. July 30.  
 I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of lampblack. 22,559. August 3.  
 I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Refining crude paraffin, etc. 22,560. August 3.  
 I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of solid greases. 22,561. August 3.  
 I.G. Farbenindustrie Akt.-Ges. Manufacture of aromatic oxyaldehydes. 22,050. July 30. (Germany, July 30, 1927.)  
 I.G. Farbenindustrie Akt.-Ges. Production of water-glass solutions. 22,290. August 1. (Germany, October 31, 1927.)  
 I.G. Farbenindustrie Akt.-Ges. Manufacture of acid wood dyestuffs. 22,298. August 1. (Germany, August 3, 1927.)  
 I.G. Farbenindustrie Akt.-Ges. Catalytic hydrogenation of aromatic bases. 22,321. August 1. (Germany, August 6, 1927.)  
 I.G. Farbenindustrie Akt.-Ges. Manufacture of condensation products of naphthalene, etc. 22,322. August 1. (Germany, August 22, 1927.)  
 I.G. Farbenindustrie Akt.-Ges. Manufacture of artificial rubber etc. 22,323. August 1. (Germany, August 2, 1927.)  
 I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of fast prints. 22,822. August 7.  
 I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of benzanthrone condensation products. 22,823. August 7.  
 I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of o-hydroxyazo dyestuffs. 22,824. August 7.  
 I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Recovery of glycerol from liquors. 22,825. August 7.  
 I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of effects on webs of paper, etc. 22,826. August 7.  
 I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of coloured resins. 22,827. August 7.  
 I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of fertilisers. 22,828. August 7.  
 I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of emulsifying-agents. 22,829. August 7.  
 I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of resinous substances. 22,894. August 8.  
 I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Dyeing fibres. 22,998. August 9.  
 I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of acetaldehydes and acetic acid. 22,999. August 9.  
 I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of stable foams and emulsions. 23,000. August 9.  
 I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of vat dyestuffs. 23,001. August 9.  
 I.G. Farbenindustrie Akt.-Ges. and Mond, A. L. Method of treating magnesium, etc., in the molten state. 23,029. August 9.  
 I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of organic substances. 23,195. August 11.  
 I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of butadiene. 23,196. August 11.  
 I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Colouring, sizing, etc., paper. 22,890. August 8. (Germany, August 8, 1927.)  
 I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of azo-dyestuffs. 22,891. August 8. (Germany, August 8, 1927.)  
 I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of hydrocarbons, etc. 22,893. August 8. (Germany, September 1, 1927.)  
 I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of lacquers, etc. 22,895. August 8.  
 I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Adhesives. 23,138. August 10. (Germany, August 10, 1927.)  
 International Bitumenoil Corporation. Apparatus for low-temperature distillation. 22,072. July 30.  
 Kemikal, Inc. Producing oxygen-containing compounds of the aliphatic series. 22,304. August 1. (United States, March 13.)  
 Laing, B. and Nielsen, H. Apparatus for distillation of solid carbonaceous materials. 22,042. July 30.  
 Reinhard, H. Recovery of bye-products of waste from manufacture of pigments, etc. 22,818. August 7.  
 Ruth-Aldo Co., Inc. Saponification of primary solutions of acetyl-cellulose. 22,463. August 3. (France, December 28, 1927.)  
 Ruth-Aldo Co., Inc. Devices for sizing threads. 22,464. August 3. (France, December 30, 1927.)  
 Ruth-Aldo Co., Inc. Apparatus for acetylation of cellulose. 22,465. August 3. (France, December 28, 1927.)  
 Ruth-Aldo Co., Inc. Softening fibres of cellulose origin. 22,466. August 3. (France, December 29, 1927.)  
 Ruth-Aldo Co., Inc. Esterification of cellulose. 22,467. August 3. (France, December 29, 1927.)  
 Ruth-Aldo Co., Inc. Esterification of cellulose. 22,468. August 3. (France, December 30, 1927.)  
 Ruth-Aldo Co., Inc. Machines for spinning cellulose collodions. 22,469. August 3. (France, December 30, 1927.)  
 Ruth-Aldo Co., Inc. Preparation of organic esters of cellulose. 22,470. August 3. (France, January 6.)  
 Schmidt, F. L. Production of fertilizer mixtures. 22,332. August 1. (Germany, August 23, 1927.)  
 Standard Oil Development Co. Extraction and purification of naphthenic acid. 22,070. July 30. (United States, July 30, 1927.)  
 Schmidt, L. Obtaining bornyl and isobornyl ethers. 23,147. August 10. (France, February 18.)  
 Selden Co. Production of monocarboxylic acids, etc. 23,091. August 10. (United States, June 23.)  
 Soc. of Chemical Industry in Basle. Manufacture of amino-anthraquinone derivatives. 22,795. August 7. (Switzerland, August 4, 1927.)  
 Tinling, J. A. Manufacture of borneol, etc. 22,432. August 2.  
 Wagner, C. L. Recovering chemicals and heat from waste liquor. 22,834. August 7.

## Weekly Prices of British Chemical Products

The prices and comments given below respecting British chemical products are based on direct information supplied by the British manufacturers concerned. Unless otherwise qualified, the figures quoted apply to fair quantities, net and naked at makers' works.

### General Heavy Chemicals

ACID ACETIC, 40% TECH.—£19 per ton.  
 ACID BORIC, COMMERCIAL.—Crystal, £30 per ton; powder, £32 per ton; extra fine powder, £34 per ton.  
 ACID HYDROCHLORIC.—3s. 9d. to 6s. per carboy d/d, according to purity, strength, and locality.  
 ACID NITRIC, 80° Tw.—£21 10s. to £27 per ton, makers' works, according to district and quality.  
 ACID SULPHURIC.—Average National prices f.o.r. makers' works, with slight variations up and down owing to local considerations; 140° Tw., Crude Acid, 60s. per ton, 168° Tw., Arsenical, £5 10s. per ton, 168° Tw., Non-arsenical, £6 15s. per ton.  
 AMMONIA ALKALI.—£6 15s. per ton f.o.r. Special terms for contracts.  
 BISULPHITE OF LIME.—£7 10s. per ton, f.o.r. London, packages extra.  
 BLEACHING POWDER.—Spot, £9 10s. per ton d/d; Contract, £8 10s. per ton d/d, 4-ton lots.  
 BORAX, COMMERCIAL.—Crystals, £19 10s. to £20 per ton; granulated, £19 per ton; powder, £21 per ton. (Packed in 2-cwt. bags carriage paid any station in Great Britain.)  
 CALCIUM CHLORIDE (SOLID).—£5 to £5 5s. per ton d/d carr. paid.  
 COPPER SULPHATE.—£25 to £25 10s. per ton.  
 METHYLATED SPIRIT 61 O.P.—Industrial, 1s. 3d. to 1s. 8d. per gall.; pyridinised industrial, 1s. 5d. to 1s. 10d. per gall.; mineralised, 2s. 4d. to 2s. 8d. per gall.; 64 O.P., 1d. extra in all cases.  
 NICKEL SULPHATE.—£38 per ton d/d.  
 NICKEL AMMONIA SULPHATE.—£38 per ton d/d.  
 POTASH CAUSTIC.—£30 to £33 per ton.  
 POTASSIUM BICHROMATE.—4s. per lb.  
 POTASSIUM CHLORATE.—3d. per lb., ex wharf, London, in cwt. kegs, SALAMMONIAC.—£45 to £50 per ton d/d. Chloride of ammonia, £37 to £45 per ton, carr. paid.  
 SALT CAKE.—£3 15s. to £4 per ton d/d. In bulk.  
 SODA CAUSTIC, SOLID.—Spot lots delivered, £15 2s. 6d. to £18 per ton, according to strength; 20s. less for contracts.  
 SODA CRYSTALS.—£5 to £5 5s. per ton, ex railway depots or ports.  
 SODIUM ACETATE 97/98%.—£21 per ton.  
 SODIUM BICARBONATE.—£10 10s. per ton, carr. paid.  
 SODIUM BICHROMATE.—3d. per lb.  
 SODIUM BISULPHITE POWDER, 60/62%.—£17 10s. per ton delivered for home market, 1-cwt. drums included; £15 10s. f.o.r. London.  
 SODIUM CHLORATE.—2d. per lb.  
 SODIUM NITRATE, 100% BASIS.—£27 per ton d/d.  
 SODIUM PHOSPHATE.—£14 per ton, f.o.b. London, casks free.  
 SODIUM SULPHATE (GLAUBER SALTS).—£3 12s. 6d. per ton.  
 SODIUM SULPHIDE CONC. SOLID, 60/65%.—£13 5s. per ton d/d. Contract, £13. Carr. paid.  
 SODIUM SULPHIDE CRYSTALS.—Spot, £8 12s. 6d. per ton d/d. Contract, £8 10s. Carr. paid.  
 SODIUM SULPHITE, PEA CRYSTALS.—£14 per ton f.o.b. London, 1-cwt. kegs included.

### Coal Tar Products

ACID CARBOLIC CRYSTALS.—6d. to 6½d. per lb. Crude 60's, 2s. 2d. to 2s. 2½d. per gall. prompt.  
 ACID CRESYLIC 99/100.—2s. 7d. to 3s. per gall. 97/99.—2s. 6d. to 2s. 7d. per gall. Pale, 95%, 2s. 4d. to 2s. 5d. per gall. Dark, 2s. 1d. to 2s. 2d.  
 ANTHRACENE.—A quality, 2d. per unit. 40%, £5 per ton.  
 ANTHRAZENE OIL, STRAINED.—8d. to 8½d. per gall. Unstrained, 7d. to 8d. per gall.  
 BENZOLE.—Prices at works: Crude, 10d. to 11d. per gall.; Standard Motor, 1s. 4d. to 1s. 5d. per gall.; 90%, 1s. 7d. to 1s. 8d. per gall.; Pure, 1s. 10d. to 1s. 11d. per gall.  
 TOLUOLE.—90%, 1s. 6d. to 2s. per gall. Firm. Pure, 1s. 10d. to 2s. 2d. per gall.  
 XYLOL.—1s. 3d. to 1s. 11d. per gall. Pure, 1s. 6d. to 1s. 7d. per gall.  
 CREOSOTE.—Cresylic, 20/24%, 9d. per gall.; middle oil, 6½d. to 7½d. per gall. Heavy, 7d. to 8½d. per gall. Standard specification, 6d. to 6½d. ex works. Salty, 7½d. per gall.  
 NAPHTHA.—Crude, 8½d. to 9d. per gall. Solvent 90/160, 1s. 1½d. to 1s. 2½d. per gall. Solvent 95/160, 1s. 2d. to 1s. 7d. per gall. Solvent 90/190, 11d. to 1s. 4d. per gall.  
 NAPHTHALENE CRUDE.—Drained Creosote Salts, £5 per ton. Whizzed, £8 per ton. Hot pressed, £8 10s. to £9 per ton.  
 NAPHTHALENE.—Crystals, £13 to £14 10s. per ton. Quiet. Flaked, £14 to £15 per ton, according to districts.  
 PITCH.—Medium soft, 47s. 6d. to 50s. per ton, f.o.b., according to district. Nominal.  
 PYRIDINE.—90/140, 5s. to 6s. per gall. 90/180, 3s. to 4s. per gall. Heavy, 2s. 6d. to 3s. per gall.

### Intermediates and Dyes

In the following list of Intermediates delivered prices include packages except where otherwise stated:  
 ACID AMIDONAPHTHOL DISULPHO (1-8-2-4).—10s. 9d. per lb.  
 ACID ANTHRANILIC.—6s. per lb. 100%.  
 ACID BENZOIC.—1s. 8½d. per lb.  
 ACID GAMMA.—4s. 6d. per lb.  
 ACID H.—3s. per lb.  
 ACID NAPHTHIONIC.—1s. 6d. per lb.  
 ACID NEVILLE AND WINTHER.—4s. 9d. per lb.  
 ACID SULPHANILIC.—8½d. per lb.  
 ANILINE OIL.—8d. per lb. naked at works.  
 ANILINE SALTS.—8d. per lb. naked at works.  
 BENZALDEHYDE.—2s. 3d. per lb.  
 BENZIDINE BASE.—3s. 3d. per lb. 100% basis d/d.  
 BENZOIC ACID.—1s. 8½d. per lb.  
 o-CRESOL 29/31° C.—5½d. per lb.  
 m-CRESOL 98/100%.—2s. 3d. to 2s. 6d. per lb.  
 p-CRESOL 32/34° C.—2s. 3d. to 2s. 6d. per lb.  
 DICHLORANILINE.—2s. per lb.  
 DIMETHYLANILINE.—1s. 11d. per lb.  
 DINITHROBENZENE.—8½d. per lb. naked at works. £75 per ton.  
 DINITROCHLORBENZENE.—£84 per ton d/d.  
 DINITROTOLUENE.—48/50° C. 8d. per lb. naked at works. 66/68° C. 9d. per lb. naked at works.  
 DIPHENYLAMINE.—2s. 10d. per lb. d/d.  
 a-NAPHTHOL.—2s. per lb. d/d.  
 B-NAPHTHOL.—10d. per lb. d/d.  
 a-NAPHTHYLAMINE.—1s. 3d. per lb.  
 B-NAPHTHYLAMINE.—3s. per lb.  
 o-NITRANILINE.—5s. 9d. per lb.  
 m-NITRANILINE.—3s. per lb. d/d.  
 p-NITRANILINE.—1s. 8d. per lb.  
 NITROBENZENE.—6d. per lb. naked at works.  
 NITRONAPHTHALENE.—1s. 3d. per lb.  
 R. SALT.—2s. 2d. per lb.  
 SODIUM NAPHTHIONATE.—1s. 8½d. per lb. 100% basis d/d.  
 o-TOLUIDINE.—8d. per lb.  
 p-TOLUIDINE.—1s. 10d. per lb. naked at works.  
 m-XYLIDINE ACETATE.—2s. 6d. per lb. 100%.  
 N. W. ACID.—4s. 9d. per lb. 100%.

### Wood Distillation Products

ACETATE OF LIME.—Brown, £10 5s. per ton. Good demand. Grey, £14 10s. to £15 per ton. Liquor, 9d. per gall.  
 CHARCOAL.—£6 to £9 per ton, according to grade and locality. Foreign competition severe.  
 IRON LIQUOR.—1s. 3d. per gall, 32° Tw. 1s. per gall. 24° Tw.  
 RED LIQUOR.—9d. to 10d. per gall.  
 WOOD CREOSOTE.—1s. 9d. per gall. Unrefined.  
 WOOD NAPHTHA, MISCELLIE.—3s. 11d. to 4s. 3d. per gall. Solvent, 4s. 3d. per gall.  
 WOOD TAR.—£4 to £5 per ton.  
 BROWN SUGAR OF LEAD.—£40 15s. per ton.

### Rubber Chemicals

ANTIMONY SULPHIDE.—Golden, 6d. to 1s. 3d. per lb., according to quality; Crimson, 1s. 4d. to 1s. 6d. per lb., according to quality.  
 ARSENIC SULPHIDE, YELLOW.—1s. 9d. per lb.  
 BARYTES.—£3 10s. to £6 15s. per ton, according to quality.  
 CADMIUM SULPHIDE.—3s. 9d. to 4s. 6d. per lb.  
 CARBON BISULPHIDE.—£25 to £27 10s. per ton, according to quantity.  
 CARBON BLACK.—5½d. per lb., ex wharf.  
 CARBON TETRACHLORIDE.—£45 to £55 per ton, according to quantity. drums extra.  
 CHROMIUM OXIDE, GREEN.—1s. 2d. per lb.  
 DIPHENYLGUANIDINE.—3s. 9d. per lb.  
 INDIARUBBER SUBSTITUTES, WHITE AND DARK.—5d. to 6½d. per lb.  
 LAMP BLACK.—£35 per ton, barrels free.  
 LEAD HYPOSULPHITE.—9d. per lb.  
 LITHOPHONE, 30%.—£22 10s. per ton.  
 MINERAL RUBBER "RUBPRON."—£13 12s. 6d. per ton, f.o.r. London.  
 SULPHUR.—£9 to £11 per ton, according to quality.  
 SULPHUR CHLORIDE.—4d. to 7d. per lb., carboys extra.  
 SULPHUR PRECIP. B.P.—£47 10s. to £55 per ton.  
 THIOCARBAMIDE.—2s. 6d. to 2s. 9d. per lb., carriage paid.  
 THIOCARBANILIDE.—2s. 1d. to 2s. 3d. per lb.  
 VERMILION, PALE OR DEEP.—6s. 2d. to 6s. 4d. per lb.  
 ZINC SULPHUR.—1s. per lb.

### Pharmaceutical and Photographic Chemicals

ACID, ACETIC, PURE, 80%.—£39 per ton ex wharf London in glass containers.  
 ACID, ACETYL SALICYLIC.—2s. 7d. to 2s. 8d. per lb.  
 ACID, BENZOIC, B.P.—2s. to 3s. 3d. per lb., according to quantity. Solely ex Gum, 1s. 3d. to 1s. 6d. per oz., according to quantity.

**ACID, BORIC B.P.**—Crystal, 36s. to 39s. per cwt.; powder, 40s. to 43s. per cwt.; extra fine powder, 42s. per cwt., according to quantity. Carriage paid any station in Great Britain, in ton lots.  
**ACID, CAMPHORIC.**—19s. to 21s. per lb.  
**ACID, CITRIC.**—1s. 10d. to 2s. per lb. Less 5%.  
**ACID, GALIC.**—2s. 8d. per lb. for pure crystal, in cwt. lots.  
**ACID, PYROGALLIC, CRYSTALS.**—7s. 3d. per lb. Resublimed, 8s. 3d. per lb.  
**ACID, SALICYLIC, B.P.**—1s. 4½d. to 1s. 6d. per lb. Technical, 10d. to 11½d. per lb.  
**ACID, TANNIC B.P.**—2s. 8d. to 2s. 10d. per lb.  
**ACID, TARTARIC.**—1s. 4½d. per lb., less 5%.  
**ACETANILIDE.**—1s. 5d. to 1s. 8d. per lb. for quantities.  
**AMIDOL.**—7s. 6d. to 9s. per lb., d/d.  
**AMIDOPYRIN.**—8s. to 8s. 3d. per lb.  
**AMMONIUM BENZOATE.**—3s. 3d. to 3s. 6d. per lb., according to quantity. 18s. per lb. ex Gum.  
**AMMONIUM CARBONATE B.P.**—£37 per ton. Powder, £39 per ton in 5 cwt. casks. Resublimated, 1s. per lb.  
**ATROPINE SULPHATE.**—9s. per oz.  
**BARBITONE.**—5s. 9d. to 6s. per lb.  
**BENZONAPHTHOL.**—3s. 3d. per lb. spot.  
**BISMUTH CARBONATE.**—9s. 9d. per lb.  
**BISMUTH CITRATE.**—9s. 3d. per lb.  
**BISMUTH SALICYLATE.**—8s. 9d. per lb.  
**BISMUTH SUBNITRATE.**—8s. 3d. per lb.  
**BISMUTH NITRATE.**—Cryst. 5s. 9d. per lb.  
**BISMUTH OXIDE.**—12s. 3d. per lb.  
**BISMUTH SUBCHLORIDE.**—10s. 9d. per lb.  
**BISMUTH SUBGALLATE.**—7s. 9d. per lb. Extra and reduced prices for smaller and larger quantities of all bismuth salts respectively.  
**BISMUTHI ET AMMON LIQUOR.**—Cit. B.P. in W. Qts. 1s. 0½d. per lb.; 12 W. Qts. 11½d. per lb.; 36 W. Qts. 11d. per lb.  
**BORAX B.P.**—Crystal, 24s. to 27s. per cwt.; powder, 25s. to 28s. per cwt., according to quantity. Carriage paid any station in Great Britain, in ton lots.  
**BROMIDES.**—Ammonium, 1s. 11d. to 2s. 1d. per lb.; potassium, 1s. 7½d. to 1s. 9½d. per lb.; sodium, 1s. 10d. to 2s. per lb.; granulated, 1d. per lb. less; all spot. Large quantities at lower rates.  
**CALCIUM LACTATE.**—B.P., 1s. 2½d. to 1s. 4½d. per lb.  
**CAMPHOR.**—Refined flowers, 2s. 11d. to 3s. per lb., according to quantity; also special contract prices.  
**CHLOR HYDRATE.**—3s. 2d. to 3s. 4d. per lb.  
**CHLOROFORM.**—2s. 4½d. to 2s. 7d. per lb., according to quantity.  
**CREOSOTE CARBONATE.**—6s. per lb.  
**ETHERS.**—S.G. .730—11d. to 1s. od. per lb., according to quantity; other gravities at proportionate prices.  
**FORMALDEHYDE.**—£30 per ton, in barrels ex wharf.  
**GUAIACOL CARBONATE.**—4s. 9d. to 5s. per lb.  
**HEXAMINE.**—2s. 3d. to 2s. 6d. per lb.  
**HOMATROPINE HYDROBROMIDE.**—30s. per oz.  
**HYDRASTINE HYDROCHLORIDE.**—English make offered at 120s. per oz.  
**HYDROGEN PEROXIDE (12 VOL.S.).**—1s. 4d. per gallon, f.o.r. makers' works, naked. Winchesters, 2s. 11d. per gall. B.P., 10 vols., 2s. to 2s. 3d. per gall.; 20 vols., 4s. per gall.  
**HYDROQUINONE.**—3s. 9d. to 4s. per lb., in cwt. lots.  
**HYPOPHOSPHITES.**—Calcium, 3s. 6d. per lb., for 28 lb. lots; potassium, 4s. 1d. per lb.; sodium, 4s. per lb.  
**IRON AMMONIUM CITRATE.**—B.P., 2s. 6d. to 2s. 9d. per lb. Green, 2s. 9d. to 3s. 2d. per lb.; U.S.P., 2s. 7d. to 2s. 10d. per lb.  
**IRON PERCHLORIDE.**—18s. to 20s. per cwt., according to quantity.  
**IRON QUININE CITRATE.**—B.P., 8½d. to 9½d. per oz.  
**MAGNESIUM CARBONATE.**—Light commercial, £31 per ton net.  
**MAGNESIUM OXIDE.**—Light commercial, £62 10s. per ton, less 2½%; Heavy commercial, £21 per ton, less 2½%; in quantity lower; Heavy Pure, 2s. to 2s. 3d. per lb., in 1 cwt. lots.  
**MENTHOL.**—A.B.R. recrystallised B.P., 22s. per lb. net for January delivery; Synthetic, 9s. to 10s. per lb.; Synthetic detached crystals, 9s. to 12s. 6d. per lb., according to quantity; Liquid (95%), 9s. 6d. per lb.  
**MERCURIALS B.P.**—Up to 1 cwt. lots, Red Oxide, 7s. 6d. to 7s. 7d. per lb., levig. 7s. to 7s. 1d. per lb.; Corrosive Sublimate, Lump, 5s. 9d. to 5s. 10d. per lb., Powder, 5s. 2d. to 5s. 3d. per lb.; White Precipitate, Lump, 5s. 11d. to 6s. per lb., Powder, 6s. to 6s. 1d. per lb., Extra Fine, 6s. 1d. to 6s. 2d. per lb.; Calomel, 6s. 4d. to 6s. 5d. per lb.; Yellow Oxide, 6s. 10d. to 6s. 11d. per lb.; Persulph., B.P.C., 6s. 1d. to 6s. 2d. per lb.; Sulph. nig., 5s. 10d. to 5s. 11d. per lb. Special prices for larger quantities.  
**METHYL SALICYLATE.**—1s. 5d. to 1s. 9d. per lb.  
**METHYL SULPHONAL.**—9s. to 9s. 3d. per lb.  
**METOL.**—9s. to 11s. 6d. per lb. British make.  
**PARAFORMALDEHYDE.**—1s. 9d. per lb. for 100% powder.  
**PARALDEHYDE.**—1s. 1d. to 1s. 4d. per lb.  
**PHENACETIN.**—2s. 6d. to 2s. 9d. per lb.  
**PHENAZONE.**—4s. to 4s. 3d. per lb.  
**PHENOLPHTHALEIN.**—6s. to 6s. 3d. per lb.  
**POTASSIUM BITARTRATE 99/100% (Cream of Tartar).**—98s. per cwt., less 2½ per cent.

**POTASSIUM CITRATE.**—B.P.C., 2s. 4d. to 2s. 7d. per lb.; U.S.P., 2s. 3d. to 2s. 6d. per lb.

**POTASSIUM FERRICYANIDE.**—1s. 9d. per lb., in cwt. lots.

**POTASSIUM IODIDE.**—16s. 8d. to 17s. 2d. per lb., according to quantity.

**POTASSIUM METABISULPHITE.**—6d. per lb., 1-cwt. kegs included, f.o.r. London.

**POTASSIUM PERMANGANATE.**—B.P. crystals, 5½d. per lb., spot.

**QUININE SULPHATE.**—1s. 8d. to 1s. 9d. per oz., bulk in 100 oz. tins. RESORCIN.—2s. 10d. to 3s. per lb., spot.

**SACCHARIN.**—47s. per lb.; in quantity lower.

**SALOL.**—2s. 4d. per lb.

**SODIUM BENZOATE.**—B.P.—1s. 8d. to 1s. 11d. per lb.

**SODIUM CITRATE, B.P.C.**, 1911—2s. 1d. to 2s. 4d. per lb., B.P.C. 1923—2s. 5d. to 2s. 6d. per lb. U.S.P., 2s. 4d. to 2s. 7d. per lb., according to quantity.

**SODIUM FERROCYANIDE.**—4d. per lb., carriage paid.

**SODIUM HYPOSULPHITE, PHOTOGRAPHIC.**—£15 per ton, d/d consignee's station in 1-cwt. kegs.

**SODIUM NITROPRUSSIDE.**—16s. per lb.

**SODIUM POTASSIUM TARTRATE (ROCHELLE SALT).**—95s. to 100s. per cwt. Crystals, 4s. per cwt. extra.

**SODIUM SALICYLATE.**—Powder, 1s. 6d. to 1s. 9d. per lb. Crystal, 1s. 7d. to 1s. 10d. per lb.

**SODIUM SULPHIDE, PURE RECRYSTALLISED.**—10d. to 1s. 1d. per lb.

**SODIUM SULPHITE, ANHYDROUS.**—£27 10s. to £28 10s. per ton, according to quantity. Delivered U.K.

**SULPHONAL.**—6s. 9d. to 7s. per lb.

**TARTAR EMETIC, B.P.**—Crystal or powder, 2s. 1d. to 2s. 2d. per lb.

**THYMOL.**—Puriss., 9s. 6d. to 9s. 9d. per lb., according to quantity.

Firmer. Natural, 14s. 3d. per lb.

### Perfumery Chemicals

**ACETOPHENONE.**—7s. per lb.

**AUBEPINE (EX ANETHOL).**—10s. per lb.

**AMYL ACETATE.**—2s. 6d. per lb.

**AMYL BUTYRATE.**—4s. 9d. per lb.

**AMYL SALICYLATE.**—2s. 9d. per lb.

**ANETHOL (M.P. 21/22° C.).**—3s. 3d. per lb.

**BENZYL ACETATE FROM CHLORINE-FREE BENZYL ALCOHOL.**—2s. per lb.

**BENZYL ALCOHOL FREE FROM CHLORINE.**—2s. per lb.

**BENZALDEHYDE FREE FROM CHLORINE.**—2s. 6d. per lb.

**BENZYL BENZOATE.**—2s. 6d. per lb.

**CINNAMIC ALDEHYDE NATURAL.**—15s. 6d. per lb.

**COUMARIN.**—9s. 6d. per lb.

**CITRONELLOL.**—13s. 6d. per lb.

**CITRAL.**—8s. 3d. per lb.

**ETHYL CINNAMATE.**—6s. per lb.

**ETHYL PHTHALATE.**—2s. 6d. per lb.

**EUGENOL.**—10s. 6d. per lb.

**GERANIOL (PALMAROSA).**—23s. per lb.

**GERANIOL.**—6s. 6d. to 11s. per lb.

**HELiotropine.**—4s. 6d. per lb.

**ISO EUGENOL.**—14s. 6d. per lb.

**LINALOL.**—Ex Bois de Rose, 15s. per lb. Ex Shui Oil, 10s. 6d. per lb.

**LINALYL ACETATE.**—Ex Shui Oil, 14s. 6d. per lb. Ex Bois de Rose, 18s. 6d. per lb.

**METHYL ANTHRANILATE.**—8s. 6d. per lb.

**METHYL BENZOATE.**—4s. per lb.

**MUSK KETONE.**—35s. per lb.

**MUSE XYLOL.**—7s. per lb.

**NEROLIN.**—3s. 6d. per lb.

**PHENYL ETHYL ACETATE.**—11s. per lb.

**PHENYL ETHYL ALCOHOL.**—10s. 6d. per lb.

**RHODINOL.**—38s. per lb.

**SAFROL.**—1s. 6d. per lb.

**TERPINEOL.**—1s. 6d. per lb.

**VANILLIN.**—16s. 6d. per lb.

### Essential Oils

**ALMOND OIL.**—Foreign S.P.A., 10s. 6d. per lb.

**ANISE OIL.**—2s. 9d. per lb.

**BERGAMOT OIL.**—26s. per lb.

**BOURBON GERANIUM OIL.**—20s. per lb.

**CAMPHOR OIL.**—9d. per lb.

**CANANGA OIL, JAVA.**—12s. per lb.

**CINNAMON OIL LEAF.**—6s. 9d. per oz.

**CASSIA OIL 80/85%.**—7s. 6d. per lb.

**CITRONELLA OIL.**—Java, 2s. per lb., c.i.f. U.K. port. Ceylon, pure, 2s. per lb.

**CLOVE OIL (PURE 90/92%).**—7s. 3d. per lb.

**EUCALYPTUS OIL, AUSTRALIAN, B.P. 70/75%.**—2s. 1d. per lb.

**LAVENDER OIL.**—Mont Blanc, 48/50%, Esters, 15s. 9d. per lb.

**LEMON OIL.**—14s. 6d. per lb.

**LEMONGRASS OIL.**—4s. 3d. per lb.

**ORANGE OIL, SWEET.**—30s. per lb.

**OTTO OF ROSE OIL.**—Anatolian, 35s. per oz. Bulgarian, 75s. per oz.

**PALMA ROSA OIL.**—13s. 9d. per lb.

**PEPPERMINT OIL.**—Wayne County, 14s. 6d. per lb.; Japanese, 8s. 3d. per lb.

**PETITGRAIN.**—7s. 3d. per lb. Sandalwood, Mysore, 26s. 6d. per lb., 90/95%, 16s. 6d. per lb.

## London Chemical Market

*The following notes on the London Chemical Market are specially supplied to THE CHEMICAL AGE by Messrs. R. W. Greeff & Co., Ltd., and Messrs. Chas. Page & Co., Ltd., and may be accepted as representing these firms' independent and impartial opinions.*

London, August 16, 1928.

BUSINESS during the week for both home and export has been fairly good, and prices, with one or two exceptions, remain unchanged.

### General Chemicals

**ACETONE.**—The position is entirely changed. The market is extremely firm at £70 to £73 per ton.

**ACID ACETIC.**—Unchanged at Convention prices.

**ACID FORMIC.**—The improved demand continues at £47 per ton for 85%.

**ACID LACTIC.**—Unchanged.

**ACID OXALIC.**—Firm at £31 to £33 per ton.

**ACID TARTARIC.**—The demand continues poor, prices unchanged at about 1s. 4d. per lb.

**AMMONIUM CHLORIDE.**—Unchanged.

**ALUMINA SULPHATE.**—The position is very firm, with manufacturers fully sold at £6 10s. per ton for 17/18%.

**ARSENIC.**—Unchanged.

**CHLORIDE OF BARIUM.**—There is practically nothing available for early delivery. Price now £9 10s. to £10, ex store.

**COPPER SULPHATE.**—Unchanged.

**CREAM OF TARTAR.**—In poor demand at £100 per ton, less 2½% for B.P. 99/100%.

**FORMALDEHYDE** is in good demand at £39 10s. to £40 10s. for 40% by volume.

**LEAD ACETATE.**—£42 10s. and £41 per ton for white and brown respectively. The position a little firmer.

**LEAD NITRATE.**—Firm at £37 per ton.

**LIME ACETATE.**—Is very firm, and price advancing.

**METHYL ACETONE.**—The demand is improved at £56 to £58 per ton for 45%.

**POTASSIUM CARBONATE.**—Unchanged.

**POTASSIUM CHLORATE.**—Unchanged at £28 per ton.

**PERMANGANATE OF POTASH** is very firm, with a steady inquiry at 5½d. per lb. for B.P. Commercial 4d. per lb. less.

**POTASSIUM PRUSSIATE.**—Unchanged at £63 10s. to £65 10s. per ton.

**SODIUM ACETATE.**—Is very firm at £21 to £22 per ton, with a good demand.

**SODIUM PHOSPHATE** is unchanged.

**SODIUM PRUSSIATE.**—Very firm at 4½d. per lb. to 5d. per lb. according to quality.

**SULPHIDE OF SODIUM.**—Unchanged.

**TARTAR EMETIC.**—The position is a little easier at 11½d. per lb.

**ZINC SULPHATE.**—Unchanged.

### Coal Tar Products

THE market for benzols, naphthas, etc., is considerably firmer and there are practically no quantities available.

**MOTOR BENZOL** is quoted at 1s. 5d. per gallon on rails, but there is scarcely any available.

**SOLVENT NAPHTHA** is firm at 1s. 1½d. per gallon f.o.r. makers' works.

**HEAVY NAPHTHA** remains at 1s. 1d. to 1s. 1½d. per gallon, on rails.

**CREOSOTE OIL** is still very weak, and the price is about 6d. per gallon, f.o.r. in the North, and 6½d. per gallon in London.

**CRESYLIC ACID.**—The 98/100% quality is weaker, and is quoted at 2s. 2d. per gallon, f.o.b., while the dark quality, 95/97%, remains at about 1s. 10d. per gallon f.o.b. naked.

**NAPHTHALENE** remains unchanged, the 74/76 quality being quoted at £5 per ton, and the 76/78 quality at £6 to £6 10s. per ton.

**COAL TAR PITCH** is weaker, to-day's value is 55s. to 60s. per ton, f.o.b. U.K. port.

## Effect of Perspiration on Dyestuffs

### Joint Investigation Commenced

THE Society of Dyers and Colourists have instituted and are now carrying on a series of tests relative to the fastness of dyed fabrics to perspiration. Professor McSwiney, of the Medical Department of the University of Leeds, has undertaken to supervise this research work and the British Research Association for the Woollen and Worsted Industries has provided, under a joint scheme with the Society of Dyers and Colourists, a salary for the research worker, Mr. C. C. N. Vass, B.Sc., in order to obtain definite information on the constitution of perspiration before anything is done to prescribe tests for fastness, etc.

Dr. S. G. Barker, director of research at Torridon, Headingley, Leeds (the headquarters of the British Research Association for the Woollen and Worsted Industries), states that after preliminary investigation it was found that there was no definite knowledge of the chemical constitution of perspiration, neither was there any knowledge regarding the action of the atmosphere on perspiration after it had been exuded from the body. Further, it was unknown whether a normal person exuded alkaline or acid perspiration, many cases of both types having been found. People of a tubercular type, those engaged in mines or in specific occupations exuded perspiration which was quite different in character from that of other persons. The first experiment was to determine what was the average normal perspiration. This would be followed up with an investigation of normal and abnormal perspiration produced under a variety of conditions, such as after excessive manual labour, fatigue, during athletic performances, or in artificially reproduced atmospheres, such as would be produced in various baths.

These experiments would be extended to people suffering from a variety of complaints, such as rheumatism, etc., where perspiration had a very definite meaning. As a result of this work, it is hoped that it will be possible to place the manufacturer in a position to give a very definite test to his fabrics, so that the hosiery trade more particularly will know the precise effect of perspiration not only on the dyestuff, but on the fabric itself.

### Latest Oil Prices

**LONDON, August 15.—LINSEED OIL** was steady at 2s. 6d. per ton advance. Spot, ex mill, £28 15s.; August, £27 12s. 6d.; September-December, £27 12s. 6d.; January-April, £28 5s.; and, May-August, £28 15s. naked. **RAPE OIL** was nominal. Crude extracted, £40 10s.; technical refined, £42 10s., naked, ex wharf. **COTTON OIL** slow. Egyptian crude, £32; refined common edible, £37 10s.; and deodorised, £39 10s., naked. **TURPENTINE** was steady and 3d. per cwt. higher. American, spot, 42s., sellers, after 41s. 9d. had been paid; September-December, 43s. per cwt., sellers.

**HULL, August 15.—LINSEED OIL.**—Spot and August, £27 15s.; September-December, £27 17s. 6d.; January-April, £28 5s. per ton, naked. **COTTON OIL.**—Bombay crude, £28 10s.; Egyptian crude, £29; edible refined, £33 10s.; technical, £33; deodorised, £35 10s. per ton, naked. **PALM KERNEL OIL.**—Crushed, 5½ per cent., £37 5s. per ton, naked. **GROUNDNUT OIL.**—Crushed/extracted £39; deodorised, £43 per ton. **SOYA OIL.**—Extracted and crushed, £32; deodorised, £35 10s. per ton. **RAPE OIL.**—Crude/extracted, £40 15s.; refined, £42 15s. per ton. **COD OIL.**—Spot, 29 6d., in barrels. **TURPENTINE.**—Spot, 43s. 6d. per cwt., net cash terms ex mill. **CASTOR OIL.**—Unaltered.

### Nitrogen Products

**Export.**—During the last week there has been no change in the price of sulphate of ammonia. It is understood that there is good buying at £9 3s. 6d. to £9 5s. 6d. per ton, f.o.b. U.K. port in single bags. Moreover, supplies are not so plentiful as usual at this time of year, and it seems that producers will have no difficulty in operating at the rising scale which they have announced.

**Home.**—The home market remains very quiet. A few large merchants are making purchases at scale prices for delivery during winter and spring months. The interest in the prompt position is almost negligible.

**Nitrate of Soda.**—Up to the present no report has been made of the discussion taking place in Valparaiso. The market continues quiet at 16s. 4d. per metric quintal f.a.s. Chile for prompt shipment.

### Antimony Plant for New Brunswick

ACCORDING to Brig.-General Charles A. Smart, C.M.G., president of the Antimony Smelting and Refining Co., Ltd., plans and specifications for the plant to be installed by the company at Lake George, York County, New Brunswick, have been completed and preliminary work will be started at Lake George as soon as material can be moved over the highways to the property.

## Scottish Chemical Market

The following notes on the Scottish Chemical Market are specially supplied to THE CHEMICAL AGE by Messrs. Charles Tennant and Co., Ltd., Glasgow, and may be accepted as representing the firm's independent and impartial opinion.

Glasgow, August 15, 1928.

THE Scottish heavy chemical market has been quieter during the past week with little or no change in prices except in the case of acetone, which has advanced £6 per ton.

### Industrial Chemicals

**ACETONE.** B.G.S.—£70 to £73 per ton, ex store, according to quantity.

**ACID ACETIC.**—98/100% glacial, £56 to £67 per ton according to quality and packing, c.i.f. U.K. ports; 80% pure, £37 10s. per ton, ex wharf; 80% technical, £37 10s. per ton, ex wharf.

**ACID BORIC.**—Crystals, granulated or small flakes, £30 per ton. Powder, £32 per ton, packed in bags, carriage paid U.K. stations.

**ACID CARBOLIC, ICE CRYSTALS.**—Quoted 6d. per lb., delivered or f.o.b. U.K. ports.

**ACID CITRIC, B.P.**—Offered for spot delivery at 1s. 11d. per lb., less 5%, ex store. Quoted 1s. 10d. per lb., less 5%, ex wharf, to come forward.

**ACID HYDROCHLORIC.**—Usual steady demand. Arsenical quality, 4s. per carboy. Dearnsenicated quality, 5s. 6d. per carboy, ex works, full wagon loads.

**ACID NITRIC.**—80% quality, £24 10s. per ton, ex station, full truck loads.

**ACID OXALIC, 98/100%.**—On offer from the Continent at 3d. per lb., ex wharf. Spot material quoted 3d. per lb., ex store. In better demand.

**ACID SULPHURIC.**—£2 15s. per ton, ex works, for 14° quality; £5 15s. per ton for 168° quality. Dearnsenicated quality 20s. per ton extra.

**ACID TARTARIC, B.P. CRYSTALS.**—Quoted 1s. 4d. per lb., less 5%, ex wharf, but this price could probably be shaded.

**ALUMINA SULPHATE.**—On offer at £5 10s. per ton, c.i.f. U.K. ports. Spot material quoted £5 15s. per ton, ex store.

**ALUM, LUMP POTASH.**—Quoted £8 7s. 6d. per ton, c.i.f. U.K. ports, prompt shipment from the Continent. Crystal meal quoted £8 10s. per ton, ex store.

**AMMONIA, ANHYDROUS.**—Quoted 9d. per lb., carriage paid. Containers extra and returnable.

**AMMONIA CARBONATE.**—Lump, £37 per ton; powdered, £39 per ton, packed in 5 cwt. casks, delivered or f.o.b. U.K. ports.

**AMMONIA LIQUID, 880%.**—Unchanged at about 2d. to 3d. per lb., delivered, according to quantity.

**AMMONIA MURIATE.**—Grey galvanisers' crystals of British manufacture quoted £21 to £22 per ton, ex station. Fine white crystals offered from the Continent at about £17 5s. per ton, c.i.f. U.K. ports.

**ANTIMONY OXIDE, 98/100%.**—Spot material available at about £44 per ton, ex store, but considerably cheaper prices are quoted for prompt shipment.

**ARSENIC, WHITE POWDERED.**—On offer for prompt despatch from mines at £19 per ton, ex wharf. Spot material quoted £20 per ton, ex store.

**BARIUM CARBONATE, 98/100%.**—English material on offer at £7 5s. per ton, ex store. Continental quoted £7 per ton, c.i.f. U.K. ports.

**BARIUM CHLORIDE.**—Still scarce for spot delivery and price round about £9 per ton, ex store named. Offered from the Continent about £7 15s. per ton, c.i.f. U.K. ports.

**BLEACHING POWDER.**—British manufacturers' contract price to consumers, £6 12s. 6d. per ton, delivered, minimum 4-ton lots. Continental on offer at £6 10s. per ton, ex wharf.

**CALCIUM CHLORIDE.**—British manufacturers' price, £4 5s. to £4 15s. per ton, according to quantity and point of delivery. Continental material on offer at £3 12s. 6d. per ton, c.i.f. U.K. ports.

**COPPERAS, GREEN.**—Unchanged at about £3 10s. per ton, f.o.r. works or £4 12s. 6d. per ton, f.o.b. U.K. ports for export.

**COPPER SULPHATE.**—On offer from the Continent at about £23 15s. per ton, c.i.f. U.K. ports, but spot parcels of British material offered at about £23 per ton, ex store.

**FORMALDEHYDE, 40%.**—Quoted £35 10s. per ton, c.i.f. U.K. ports. Spot material on offer at £38 per ton, ex store.

**GLAUBER SALTS.**—English material unchanged at £4 per ton, ex store or station. Continental quoted £2 15s. per ton, c.i.f. U.K. ports.

**LEAD, RED.**—Imported material on offer at £31 per ton, ex store.

**LEAD, WHITE.**—£35 15s. to £37 per ton, c.i.f. U.K. ports.

**LEAD ACETATE.**—White crystals quoted £41 15s. per ton, ex store.

Brown on offer at about £40 per ton, ex store.

**MAGNESITE, GROUND CALCINED.**—Quoted £8 10s. per ton, ex store, in moderate demand.

**METHYLATED SPIRIT.**—Industrial quality, 64 O.P., now quoted 1s. 4d. per gallon, less 2%, delivered.

**POTASSIUM BICHROMATE.**—4d. per lb., delivered minimum 4-ton lots. Under 4-ton lots 4d. per lb. extra.

**POTASSIUM CARBONATE, 96/98%.**—Quoted £25 10s. per ton, c.i.f. U.K. ports. Crystals, 30s. per ton extra. B.P. quality crystals or powder offered at £32 per ton, c.i.f. U.K. ports.

**POTASSIUM CHLORATE, 99/100%.**—POWDER.—Rather cheaper and price named from Continent now about £22 15s. per ton, c.i.f. U.K. ports. Crystals, 20s. per ton extra.

**POTASSIUM NITRATE.**—Refined granulated quality quoted £19 2s. 6d. per ton, c.i.f. U.K. ports. Spot material on offer at about £20 10s. per ton, ex store.

**POTASSIUM PERMANGANATE, B.P. CRYSTALS.**—Quoted 5d. per lb., ex wharf.

**POTASSIUM PRUSSIATE (YELLOW).**—Rather scarcer for spot delivery and now 6d. per lb., ex store. Offered from the Continent at 6d. per lb., ex wharf, prompt shipment.

**SODA CAUSTIC.**—Powdered 98.99%, £17 17s. 6d. per ton. Solid, 76/77%, £14 10s. per ton and 70/72%, £13 12s. 6d. per ton, minimum 4-ton lots carriage paid on contract. Spot material, 10s. per ton extra.

**SODIUM ACETATE.**—Spot material on offer at about £22 per ton, ex store.

**SODIUM BICARBONATE.**—Refined recrystallised, £10 10s. per ton, ex quay or station. M.W. quality 30s. per ton less.

**SODIUM BICHROMATE.**—Quoted 3d. per lb., delivered buyers' works, minimum 4-ton lots. Under 4 and over 2-ton lots, 1/16d. per lb. extra. Under 2-ton lots, 3d. per lb.

**SODIUM CARBONATE (SODA CRYSTALS).**—£5 to £5 5s. per ton, ex quay or station. Powdered or pea quality, 27s. 6d. per ton extra. Light soda ash, £7 3s. 9d. per ton, ex quay, minimum 4-ton lots with various reductions for contract.

**SODIUM HYPOSULPHITE.**—Large crystals of English manufacture quoted £8 17s. 6d. per ton, ex station, minimum 4-ton lots. Pea crystals on offer at £14 15s. per ton, ex station, minimum 4-ton lots.

**SODIUM NITRITE, 100%.**—Quoted £19 10s. per ton, ex store.

**SODIUM PRUSSIATE.**—In moderate demand. Spot material quoted 4d. per lb., ex store.

**SODIUM SULPHATE (SALTCAKE).**—Prices, 50s. per ton, ex works, 52s. 6d. per ton delivered for unground quality. Ground quality, 2s. 6d. per ton extra.

**SODIUM SULPHIDE.**—Prices for home consumption, solid, 60/62%, £9 per ton; broken, 60/62%, £10 per ton; crystals, 30/32%, £7 2s. 6d. per ton, delivered, buyers' works on contract, minimum 4-ton lots. Special prices for some consumers. Spot material 5s. per ton extra.

**SULPHUR.**—Flowers, £12 per ton; roll, £10 15s. per ton; rock, £10 12s. 6d. per ton; ground American, £9 5s. per ton, ex store.

**ZINC CHLORIDE.**—British material, 98.100%, quoted £24 15s. per ton, f.o.b. U.K. ports; 98.100% solid on offer from the Continent at about £21 15s. per ton, c.i.f. U.K. ports; powdered, 20s. per ton extra.

**ZINC SULPHATE.**—Quoted, £11 per ton, ex wharf, prompt shipment from the Continent.

**NOTE.**—The above prices are for bulk business and are not to be taken as applicable to small parcels.

### Salt Industry in Poland

OFFICIAL statistics published in a recent issue of the *Polish Economist* (Warsaw) show that the total production of salt in Poland amounted to 539,210 tons in 1927, as compared with 423,733 tons in 1925, an increase of 27 per cent. Nearly all varieties of salt showed increases in the year 1927 as compared with 1925. Thus the output of rock salt rose by 23,274 tons (10.5 per cent.), evaporated salt by 21,579 tons (20 per cent.), and salt brine by 69,424 tons (74 per cent.). The comparatively large increase in the production of evaporated salt as compared with rock salt indicates a demand for a higher quality on the part of the consumers, which is to be attributed to the steadily growing prosperity of the population. Nearly all the different qualities showed considerable increases in 1927 as compared with 1925. Thus, the output of edible salt rose by 28,235 tons (9.3 per cent.), industrial salt by 78,483 tons (68.3 per cent.), and cattle salt by 8,396 tons (210 per cent.). Exports of edible salt in 1927 amounted to 21,789 tons (85.7 per cent.), and of industrial salt, in a natural state, to 3,624 tons (14.3 per cent.). Edible salt was chiefly exported to the Baltic countries, the principal consumers being Denmark, Latvia and Lithuania, whereas the bulk of the industrial salt was absorbed by Czechoslovakia.

## Manchester Chemical Market

(FROM OUR OWN CORRESPONDENT.)

Manchester, August 16, 1928.

AFTER the marked dullness during the previous two weeks there has been a slight, though welcome, improvement in trading conditions on the chemical market here since last report. Contract deliveries have been on much the same scale as they were before the disorganisation to business caused before the Bank Holiday, while in the open market inquiry during the past week has been somewhat more plentiful, although still, for the most part, relating to near delivery parcels.

### Heavy Chemicals

Firmness is a feature of bicarbonate of soda still, current offers of this material being on the contract basis of £10 10s. per ton, and a moderate business being put through. With regard to hyposulphite of soda, only a comparatively quiet trade in this market is passing still, but prices are fairly steady at from £9 to £9 5s. per ton for the commercial grade and about £15 10s. for the photographic. Phosphate of soda is in quiet demand, but values of this are held at up to £12 10s. per ton. A fair business is passing in the case of caustic soda quotations of which continue firm at from £13 7s. 6d. to £15 7s. 6d. per ton, according to quality. Saltcake sales are not very extensive, but prices are much as before at round £2 12s. 6d. per ton, with Glauber salt in a similar position at £2 17s. 6d. Alkali is well held at £6 2s. 6d. per ton in contract parcels, and a quietly steady demand in this section is reported. Chlorate of soda is somewhat inactive, and there has been a slight weakening in the position, current values ranging from 2½d. to 3d. per lb. A quiet trade is passing in the case of bleaching powder, with prices unchanged at about £7 per ton. With regard to prussiate of soda, quotations keep steady at from 4½d. to 5½d. per lb., according to quantity, and a fair business has been put through during the week. There is some inquiry about for bichromate of soda at steady prices, these varying from 3d. to 3½d. per lb. Sulphide of sodium is on the slow side, but offers show little change on balance, the 60-65 per cent. concentrated solid quality being quoted at round £9 15s. per ton and the commercial at £7 15s.

Buying interest in the case of permanganate of potash is limited in extent, although values have been maintained, B.P. grade selling at about 5d. per lb., and the commercial material at 4½d. A fair amount of inquiry is reported for yellow prussiate of potash at steady prices, offers ranging from 6½d. to 7½d. per lb., according to quantity. Caustic potash is firm, and meets with a moderate sale; current quotations are at from £33 5s. per ton for prompt delivery of one to five-ton lots. Chlorate of potash is easy, and relatively quiet at about 2½d. per lb., but bichromate is steady and in fair demand at 4½d. per lb. A fair trade is passing in the case of carbonate of potash at round £25 5s. per ton.

Inquiry for sulphate of copper this week has been rather less active than of late, and offers have been on a lower basis, £25 10s. per ton being about the top price to-day. Arsenic is only in quiet request, but there has been little alteration in values, these being in the neighbourhood of £17 per ton at the mines for white powdered, Cornish makes. Nitrate of lead is quiet and easy at about £36 10s. per ton, but the acetates show little change, white selling at round £40 and brown at £39 per ton. Offers of acetate of lime has been about maintained at last week's levels, grey being quoted at £16 5s. to £16 10s. per ton and brown at £9.

### Acids and Tar Products

The demand for tartaric acid has been of moderate extent, and quotations are held at from 1s. 3½d. to 1s. 4d. per lb. Citric acid is quiet, but about unchanged at 1s. 10½d. per lb. Acetic keeps steady at round £67 per ton for the glacial quality and £36 to £36 10s. per ton for the 80 per cent. commercial. With regard to oxalic acid, prices are steady at about 3½d. per lb., although current inquiry for this material is not very active.

Among the by-products, pitch remains slow and uncertain, with offers nominally round £2 7s. 6d. per ton. A moderate business is going through in the case of solvent naphtha at about 1s. 2d. per gallon. Creosote oil is steady and in fair demand at up to 6½d. per gallon. Carbolic acid is in limited request, with crude at round 2s. 1d. per gallon and crystals at 6½d. per lb.

## Arsenic in Acid Calcium Phosphate

### Question of Costs

IN the Southwark County Court, on Friday, August 10, there was an application in the case concerning the arsenical content of acid calcium phosphate, in which Thomas Jacob Simons, of Leroy Street, Tower Bridge Road, S.E., a baking powder manufacturer, sued Smith, Hughes and Co., Ltd., chemical manufacturers, of College Hill, E.C., to recover £71 13s. 2d. for damages for breach of contract over the sale of 20 one-cwt. kegs of acid calcium phosphate, and the costs in defending a grocer who was summoned for selling baking powder, the arsenical content of which was above the standard. After a lengthy hearing, Judge Moore (as reported in this journal on July 21) decided that there had been a breach of warranty, and awarded plaintiff the amount claimed, and costs. He made a stipulation in his judgment that the costs incurred in the police court proceedings should be subject to taxation before the defendants were called upon to pay them.

Mr. Povey, in making the present application, said that it was on behalf of the defendants in the case. They had certain objections to the bill of costs at the police court at Sible Hedingham, Essex. The costs had been rendered to them as between solicitor and client, and he was saying that it should not be, but should be as between party and party. His Honour, in his judgment, had mentioned that the amount of the claim should be reduced, if possible, on the taxation of the costs of the solicitor in the police court prosecution, but there was a great difficulty in that connection, as there was no scale on which the costs in the police court could be taxed.

Judge Moore: It was my intention that the costs should be as between solicitor and client. In the police court, there are no costs really, as the magistrates in their discretion allow a lump sum. The sum recoverable in this case was that paid as between solicitor and client, subject to the reduction by any amount that the magistrates might allow towards his costs. In this case, the plaintiff undertook the cost of the defence of a third party, and therefore, the plaintiff should be entitled to recover all reasonable costs incurred in undertaking the defence under the warranty. The question of what is reasonable is for the Registrar.

Mr. Povey: I submit there is no scale whereby the costs can be taxed in the police court.

Judge Moore: Unless you can succeed in showing they were not reasonable costs, the plaintiff is entitled to them.

Mr. Povey: May I ask for a ruling as to the scale it should be?

Judge Moore: I cannot do that. I shall not interfere, as I am quite certain the plaintiff will only get what he is entitled to. The application will be refused.

## Second International Conference on Bituminous Coal

A PRELIMINARY programme for the Second International Congress on Bituminous Coal, to be held under the auspices of the Carnegie Institute of Technology, Pittsburgh, U.S.A., has just been issued. Fixed nitrogen, the liquefaction of coal, low and high-temperature distillation, pulverised coal and other topics will be discussed. Among the British representatives participating will be Lord Melchett ("The Economics of the Coal Industry"); Dr. C. H. Lander, Dr. E. W. Smith, and Mr. Harald Nielsen ("Low-Temperature Distillation"); Mr. E. C. Evans ("High-Temperature Distillation"); Dr. R. Lessing ("Coal Washing"), and others. Professor Fritz Hofmann will deal with "Rubber from Coal."

### Key Industry Duty: Applications for Exemption

REPRESENTATIONS have been made to the Board of Trade under Section 10 (5) of the Finance Act, 1926, regarding the exemption from duty of butyl chloral hydrate, celtium oxide, dysprosium oxide, erbium oxide, europium oxide, gadolinium oxide, holmium oxide, lutecium oxide, samarium oxide, terbium oxide, thulium oxide, and ytterbium oxide. Any communications with respect to these representations should be addressed to the Principal Assistant Secretary, Industries and Manufactures Department, Board of Trade, Great George Street, London, S.W.1, within one month from the date of this notice (August 15).

## Company News

**NEW TAMARUGAL NITRATE CO.**—A further interim dividend of 2 per cent., less income tax, is announced for the year to July 31, 1928, payable on August 28.

**JOHN OAKLEY AND SONS.**—For the half year ended June 30 last, an interim dividend of 2½ per cent. has been declared on the ordinary shares; payable on September 1.

**RHODESIAN AND GENERAL ASBESTOS CO.**—After providing £33,671 for depreciation, against £20,622 last year, and £26,955 for income tax, against £10,036, the profit for the year to March 31 is £195,244, against £244,858.

**BRADFORD DYERS' ASSOCIATION.**—An interim dividend on account of the year to December 31 next has been declared on the ordinary shares at the rate of 1s. per share, less tax, and warrants will be posted on September 1.

**AMERICAN POTASH AND CHEMICAL CO.**—Dividends at the rate of 25 cents per share for the quarter ending June 30, 1928, and also for the quarter ending September 30, 1928, are both payable on September 29, to all shareholders of record on September 22.

**EASTMAN KODAK OF NEW JERSEY.**—The directors have declared the following dividends payable on October 1 to stockholders of the record of August 31: Regular dividend of 1½ per cent. on the preferred stock; regular dividend of \$1.25 per share on the common stock and an extra dividend of \$0.75 per share on the common stock.

**GOODLASS, WALL AND CO.**—The accounts for the year ended June 30, 1928, show a profit of £52,585, to which is added the balance brought forward of £17,372, making a total of £69,957. The directors recommend that a final dividend of 12½ per cent., less tax, making 17½ per cent., less tax, for the year, be paid on the ordinary shares, that £1,120 be written off motor vehicles, office furniture, trade fixtures, etc., that £10,000 be placed to general reserve, and that the balance (subject to directors' fees and management commission) be carried forward. The results for the year's working are satisfactory, states the report; extensions to buildings and plant are being made and are approaching completion.

## Chemical Trade Inquiries

The following inquiries, abstracted from the "Board of Trade Journal," have been received at the Department of Overseas Trade (Development and Intelligence), 35, Old Queen Street, London, S.W.1. British firms may obtain the names and addresses of the inquirers by applying to the Department (quoting the reference number and country), except where otherwise stated.

**CHEMICALS.**—A Riga firm desires to obtain the representation of British manufacturers of the above. (Reference No. 148.)

**CRUSHING AND PULVERISING PLANT.**—The Public Works Ministry, Tanzim Department, Cairo, are inviting tenders for the supply of two stone crushers and one plant for pulverising limestone. (Reference No. A.X. 6,666.)

**VARIOUS MATERIALS.**—Tenders are invited by the State Electricity Supply Works of Montevideo, for the supply of the following materials, among others:—5,000 kgs. linseed oil; 3,500 kgs. mineral grease; 400 kgs. muriatic acid; 1,600 kgs. sulphuric acid; 12,000 kgs. crystallised soda; 11,800 kgs. paint, white lead, etc.; 1,500 kgs. refractory earth; 2,500 litres spirits of turpentine. (Reference C.X. 2,848.)

## Appointments Vacant

**GENERAL SECRETARY** for the Society of Chemical Industry.—The President, Society of Chemical Industry, Central House, Finsbury Square, London, E.C.2. October 11.

**TWO CHEMISTS** for the Meat Products Research Branch of the New Zealand Department of Scientific and Industrial Research, Wellington, N.Z.—The High Commissioner for New Zealand, 415, Strand, London, W.C.2. September 8.

**LECTURER IN ORGANIC CHEMISTRY** in the Sir John Cass Technical Institute, Jewry Street, Aldgate, London, E.C.3.—The Principal. September 12.

**ASSISTANT LECTURER AND DEMONSTRATOR** in the British School of Malting and Brewing and the Department of the Biochemistry of Fermentation, University of Birmingham.—The Secretary, The University, Edmund Street, Birmingham. August 31.

## Engineering Union and I.C.I. Conference on Company's Labour Programme

THE latest official report of the Amalgamated Engineering Union (states the labour correspondent of the *Financial News*) contains a reference to the recent conference of officials of the Union with Lord Melchett and other leaders of Imperial Chemical Industries, Ltd.

That conference was called for the purpose of explaining the labour programme of I.C.I., chiefly in the unification of all labour questions within the enterprise; the formation of works councils for the purpose of providing a direct link between the board of the company and the workpeople in their remotest establishments; and the scheme under which the staff would be graded, with a view to greater security in employment, and the introduction of other favourable conditions. The keynotes were described as personal contact, improved status and increased security, co-partnership and information. These proceedings have been so far considered by the office bearers of the Amalgamated Engineering Union.

### Questions Raised by the Union

In a preliminary statement the president of the Union indicated that the scheme might be admirable from the point of view of the company, but his subsequent remarks suggested that the trade unions might be more difficult to persuade. The employers were asked, for example, what would be the position of staff grade workers under the new scheme in the event of a strike? Would the company recognise the agreement with the Amalgamated Engineering Union regarding shop stewards? What would be the attitude of Imperial Chemical Industries, Ltd., in regard to the non-unionist question? and many similar points. It is understood that at the conclusion of the conference the employers indicated that questions had been raised to which they were at the moment unable to give a definite reply; they would, however, receive their serious consideration.

Apparently the preparation of a memorandum dealing with such problems is now under the consideration of the executive council of the Amalgamated Engineering Union.

## New Chemical Trade Marks

### Applications for Registration

This list has been specially compiled for us from official sources by Gee and Co., Patent and Trade Mark Agents, Staple House, 51 and 52, Chancery Lane, London, W.C.2, from whom further information may be obtained, and to whom we have arranged to refer any inquiries relating to Patents, Trade Marks, and Designs.

Opposition to the Registration of the following Trade Marks can be lodged up to September 8, 1928.

### SICCOGANTH.

489,143. Class 1. Chemical substances used in manufactures, photography, or philosophical research and anti-corrosives. Ferdinand Sichel Kommandit Gesellschaft (a Kommandit-Gesellschaft organised under the laws of Germany, personally responsible partner Ferdinand Sichel), 26, Sudfeldstrasse, Hannover-Limmer, Germany; manufacturers.—March 5, 1928.

### PURGALETTE.

489,473. Class 3. Chemical substances prepared for use in medicine and pharmacy. May and Baker, Ltd., Garden Wharf, Church Road, Battersea, London, S.W.11; manufacturers.—March 14, 1928.

### LYTHENE.

491,719. Class 4. Raw or partly prepared vegetable, animal and mineral substances used in manufactures, not included in other classes, but not including brassfounders' facing, and not, including any goods of a like kind to brassfounders' facing. Carless, Capel and Leonard, Hope Chemical Works, Wallis Road, Hackney Wick, London, E.9; chemical manufacturers.—May 23, 1928.

## Tariff Changes

**FRANCE.**—Details are contained in the *Board of Trade Journal* for August 9 of certain goods of Tunisian origin which may be imported to France duty free.

235/64

## COMBATING CORROSION

**I**F, in the machinery you build or operate, there is one single part which is exposed to the corroding influences of moisture, chemicals, food acids or hot gases—if that one detail corrodes, and in corroding, weakens, loses efficiency, leaks or contaminates your product—that one part would be better made from

### FIRTH "STAYBRITE"

—the super malleable, super rustless steel.

Firth "Staybrite" is obtainable in the form of:

**BARS, STRUCTURAL SECTIONS,  
STRIP, SHEETS, PLATE, WIRE,  
TUBE, FORGINGS AND CASTINGS**

*Write for Booklet 59 on this subject.*



The illustrations show a Chemical Pan made by Messrs. S. Briggs & Co., Ltd., of Burton-on-Trent, and two Budgets made by the Roto Engineering Co., Ltd., Bradford—all being made from Firth "Staybrite" Steel.

**HEAT  
RESISTING  
STEELS**

In addition to their Stainless Steels, Firth's have for many years produced successful HEAT - RESISTING STEELS for application where resistance to scaling combined with optimum strength at high temperature is required. Particulars of these steels will gladly be sent upon request.

**THOS. FIRTH & SONS, LIMITED, SHEFFIELD**

## Commercial Intelligence

The following are taken from printed reports, but we cannot be responsible for any errors that may occur.

### County Court Judgments

[NOTE.—The publication of extracts from the " Registry of County Court Judgments " does not imply inability to pay on the part of the persons named. Many of the judgments may have been settled between the parties or paid. Registered judgments are not necessarily for debts. They may be for damages or otherwise, and the result of bona-fide contested actions. But the Registry makes no distinction of the cases. Judgments are not returned to the Registry if satisfied in the Court books within twenty-one days. When a debtor has made arrangements with his creditors we do not report subsequent County Court judgments against him.]

CREASE (T. H.) AND CO., LTD., 20, Pimlico Road, S.W., chemists and druggists' sundriesmen. (C.C., 18/8/28.) £17 5s. 6d. July 7.

STANSFIELD, John, Booth Fold, Waterfoot, Rossendale, chemical manufacturer. (C.C., 18/8/28.) £11 1s. 8d. July 9.

WATTS, MRS., Ellesmere, Ardington Road, Northampton, antiseptic salve manufacturer. (C.C., 18/8/28.) £15 11s. 9d. June 29.

WHITE (F. S.) AND CO., LTD., 46, Gardner Road, Prestwich, Manchester, dyers. (C.C., 18/8/28.) £32. July 11.

### Mortgages and Charges

[NOTE.—The Companies Consolidation Act of 1908 provides that every Mortgage or Charge, as described therein, shall be registered within 21 days after its creation, otherwise it shall be void against the liquidator and any creditor. The Act also provides that every Company shall, in making its Annual Summary, specify the total amount of debts due from the Company in respect of all Mortgages or Charges. The following Mortgages and Charges have been so registered. In each case, the total debt, as specified in the last available Annual Summary, is also given—marked with an \*—followed by the date of the Summary, but such total may have been reduced.]

BRITISH BEMBERG, LTD., London, E.C., artificial silk manufacturers. (M., 18/8/28.) Registered July 25, £1,000,000 debentures and premium of 7½ per cent. secured by Trust Deed dated July 6, 1928; general charge.

COOKE (WALTER) (LEICESTER), LTD., dyers, etc. (M., 18/8/28.) Registered July 26, £3,000 debentures; charged on land at Leicester and all other freehold or leasehold property, also general charge. \*£1,500. November 14, 1927.

SQUIRE (J. H.), LTD., West Gorton, manufacturing chemists. (M., 18/8/28.) Registered July 26, £500 mortgage, to Lilly R. Ridgway, Coed Isy, Davenport Crescent, Stockport; charged on 134, Liverpool Road, Patricroft; also registered July 26, £500 mortgage, to Annie M. Holmes, Breightmet Hall Lodge, Breightmet, Bolton, and another; charged on 637 and 639, Ashton Old Road, Manchester. \*£2,516 5s. May 23, 1927.

ZINC OXIDES, LTD., Cardiff. (M., 18/8/28.) Registered July 21, £1,000 debentures, to C. H. Windschuegl, 1, Leadenhall Street, E.C., chemical merchant; general charge. \*£3,000. October 29, 1927.

### Satisfaction

PATERSON LABORATORY CO., LTD., Slough. (M.S., 18/8/28.) Satisfaction registered July 28, £4,000 registered February 7, 1927.

## London Gazette, &c.

### Company Restored to Register

VIDAL DYES SYNDICATE, LTD. (R.R., 18/8/28.) By an Order of Court made July 2, 1928, the name of this company is restored to the Register of Companies and is deemed to have continued in existence as if its name had never been struck off.

### Companies Winding Up Voluntarily

ANGLO-OTTOMAN PETROLEUM SYNDICATE, LTD. (C.W.U.V., 18/8/28.) By special resolution July 20, confirmed August 7. J. Moulds, 48, Cannon Street, London, E.C., appointed as liquidator.

CHARLESWORTH (T.) AND SON, LTD. (C.W.U.V., 18/8/28.) By special resolution, July 17, confirmed August 3. T. F. Birch, Chartered Accountant, 27½, Friar Lane, Leicester, and R. V. Rodwell, Chartered Accountant, 24, Friar Lane, Leicester, appointed as liquidators. Meeting of creditors

at the offices of the Leicestershire Trade Protection Society, Ltd., 4, New Street, Leicester, Wednesday, August 22, at 3 p.m.. Creditor's claims by September 14.

SOUTH CAUCASIAN SYNDICATE, LTD. (C.W.U.V., 18/8/28.) By special resolution passed July 12, confirmed July 27. Alfred H. Ballard, 90, Fenchurch Street, E.C.3, Chartered Accountant, appointed as liquidator.

### Order Made on Application for Discharge

HEYWOOD, Francis Isadore, Abbey House, Victoria Street, Westminster, iron ore importer. (O.M.A.D., 18/8/28.) Bankrupt's discharge suspended for four weeks, until August 10, 1928.

### Receiverships

BICKERSTAFFE, WHELAN AND CO., LTD. (R., 18/8/28.) E. S. Etchells, Chartered Accountant, 35, Westgate, Huddersfield, was appointed Receiver on August 3, 1928, under powers contained in debenture dated May 9, 1927.

FAYARD (H.) ET FILS, LTD. (R., 18/8/28.) W. Tiplady, of 7-10, Prudential Buildings, New Street, Huddersfield, was appointed Receiver and Manager on July 20, under powers contained in instrument dated April 12, 1928.

### New Companies Registered

ACETATE PRODUCTS CORPORATION, LTD.—Registered as a public company on August 14. Nominal capital £675,000 in 550,000 ordinary shares of £1 each and 2,500,000 deferred shares of 1s. each. To acquire the business of manufacturers, merchants and agents for celluloid goods, cellulose lacquers, crystalline, cellulose brushing paints and imitation mother of pearl products hitherto carried on by Greenhill and Sons, Ltd., together with the benefit of an agreement with Cellulose Acetate Silk Company, Ltd., for the supply of cellulose acetate and for the right to manufacture certain goods from cellulose acetate and distribute the same, to adopt an agreement with the Condal Trust, Ltd., and to carry on the said business and that of chemists, druggists, manufacturers of and dealers in chemical and other solvents, paints, varnishes, oils and pigments, artificial silk, celluloid and plastic materials, etc. A subscriber: H. A. Norton, 26, Barnsbury Park, London, N.1.

CARBON DIOXIDE CO., LTD., 54, Mosley Street, Manchester.—Registered as a "private" company on August 9. Nom. capital £170,000 in £1 shares. To carry on the business of manufacturers, compressors and storers of and dealers in carbon dioxide in all or any of its forms, whether gaseous, liquid, solid or otherwise, etc. Power is also taken to carry on business as mineral water manufacturers, brewers, manufacturers of and dealers in ammonia and refrigerating materials, etc. Directors: R. W. Preston, H. C. Preston, G. Jameson, G. S. Newall, R. J. Raeside.

CENTRAL OIL CO. (BRISTOL), LTD., 69, Queen Square, Bristol. Registered August 14. Nominal capital, £80 in £1 shares.—Wholesale and retail oil, grease, fat and chemical merchants and manufacturers, refiners and blenders of and dealers in lubricating, mineral, vegetable and animal oils and fats, essential oils, etc. Directors: Mrs. R. R. Painter, "Ivanhoe," Beach Road, Weston-super-Mare, H. S. Painter, Mrs. H. L. Passmore, and C. R. Aldous.

CARDIFF OIL AND GREASE CO., LTD., Swindon Street, Cardiff.—Registered August 9. Nom. Capital £500 in £1 shares. Drysalters, manufacturers, distillers, blenders, purifiers, importers and exporters of and wholesale and retail dealers in grease and fats (whether animal, mineral, vegetable or synthetic) and their derivatives, petrol and other spirits, petroleum and its by-products, jellies and oils, gas and fuel oils, lubricants, bitumen, asphalt, pitch, tar, etc.

PULP AND POTASSIUM CYANIDE PRODUCTION (BRITISH RIGHTS), LTD.—Registered August 13. Nominal capital £3000 in £1 shares. To acquire, work, renew or grant licenses throughout the British Isles and all British Colonies and Dependencies for any patents relating to the manufacture or production of pulp, pulp board, wood pulp, paper pulp and paper in any shape or form and any textiles and any chemicals, cyanide of potassium or artificial silk products, etc. A subscriber: Mary Segel, 18, Manor Road, South Norwood, London, S.E.25.

